



*111 Years of Educating Aquarists*

# AQUATIC**News**

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*Brooklyn Aquarium Society Online Newsletter & Magazine*

VOL. 3

Spring 2022

No. 9





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## President's Message

In April, we had a longtime friend and great speaker, Todd Gardner. Todd always brings a compelling talk. He can speak on so many topics; we are always excited to hear from him. Todd is a professor of marine biology in Morehead City, NC, and continues to help the hobby. He is now involved in a program to breed captive marine fish.

The aquarium is still keeping us on hold as to when we can get back to normal. The good news is we will have a **LIVE EVENT** April 8th, in Saint Brendan Church Parish Hall. They are located at 1202 Ave O. We will have some restrictions for that night. Everyone for your own safety, please wear a mask inside, no one will be allowed in before 7:30 pm, and also try to keep distance between members. If we follow these simple rules, we should have an enjoyable time. They have a parking lot right across the street. We will have refreshments, but cannot have members handling the refreshments. They will be given out by our staff. These simple rules are to keep us all safe, so we can continue having our meetings.

Our speaker for this month was presented by our good friends and longtime sponsors Zoo MED. Samantha West gave a talk on environmental enrichment for Aquarium fish. The talk for this month was a virtual one that was well attended and very interesting for our members. We learned lots of new ways to keep our fish stimulated and engaged during feeding time whether it was through food choices or feeding apparatus, Sam provided a wealth of options for us. You can see a recording of this talk through our website [www.basny.org](http://www.basny.org).

Lest we forget about the passing of our dear Joe Graffagnino: Anyone wishing to make a donation in Joe's name can donate to either Disabled American Veterans or Tunnel to Tower Foundation. These were two of Joe's favorite originations.

You can check our website for future events ([www.basny.org](http://www.basny.org)). We are still not allowed to use the Aquarium for meetings, but are trying to book other halls for our meetings.

Please look out for potential locations where we all can meet. When we don't have a place, we will continue to bring you speakers online, with the help of our board member and chairman of membership David Manuel. David has been working tirelessly to keep things running smoothly during these trying times.

Check out our Facebook page for aquatic sale items from our club. We post things periodically. We always have tanks and equipment for sale. If you are looking for something aquatic, reach out to us!

Any hobby or aquatic information you hear or read about, please share with our Editor Ginny Cahill. It can be your own short stories, about your aquatic experiences, or an interesting New York Times article. Please send all emails to Ginny at [basny.editor@gmail.com](mailto:basny.editor@gmail.com). Ginny has done a great job since taking over as editor and we thank her for her dedication. The AquaticNews looks awesome, Ginny. Thank you for the design work and all the editorial decisions that need to be made.

We are always looking for your input on our events. Please let us know if you want speakers on any aquatic topic. We need our members to be more involved as we are always trying to better our club.

For more info, please call out hotline 718 837-4455, or visit our site at [www.brooklynaquariumsociety.org](http://www.brooklynaquariumsociety.org).

STEVEN MATASSA  
President



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AquaticNews 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:

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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.

# Upcoming Speakers

**April 8, 2022**

Yemi Amu

## *Aquaponics – Farming in Water*

Yemi Amu is the Founder and Director of Oko Urban Farms, Inc. In 2013 she established NYC's first and only publicly accessible outdoor aquaponics farm — The Oko Farms Aquaponics Education Center. She directs all of Oko Farms' programs

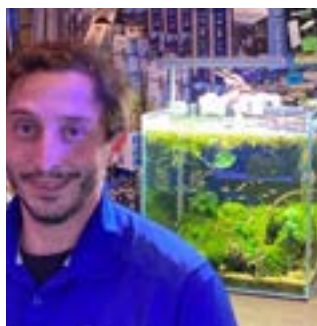


including education, design/build projects and community related activities. Yemi is one of NYC's leading aquaponics expert and is a committed educator. Over the past decade, she has facilitated the creation and maintenance of over 20 edible spaces throughout NYC; created and implemented various culinary, nutrition and gardening programs for both youth and adults; and promotes aquaponics as a tool for environmental awareness and stewardship. Yemi has a M.A. in Health and Nutrition Education from Teachers College, Columbia University. She was awarded Hunter College NYC Food Policy Center, Rising Star in NYC Food Policy (2016).

**May 13, 2022**

Peter Izzo, *House of Fins*

I'm just like most other hobbyists, I love just about every fish! (Not a fan of hagfish, they can stay where they're found!) I've been keeping fish for the past 35 years, and I am currently keeping 23 tanks filled with an assortment of killies, tetras, and smaller sized cichlids. I have a long term dream of breeding Heckel discus, and one day trying my hand at zebra plecos as well.



Overall, I love the hobby and the people in it as well, it's truly a great community that brings many of us from such differing backgrounds together!

**AQUARIUM SOCIETIES**  
**NEC**

**NEC's Aquatic e-Vent!**  
Featuring International Saturday!  
**March 25-27, 2022**  
Free to All  
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For More Information:  
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## New Members

William Esposito

Jeffrey Rosenfarb

## Open Board Positions

The board members meet once a month to discuss club business, and we can use your help! There are four board positions currently available: corresponding secretary, treasurer, webmaster and recording secretary. If you'd like to attend a meeting which are held the **1st Friday of the month**, September through June, please notify Steve Matassa at (347) 277-4793 by the Tuesday before the meeting.



### ANNOUNCING THE WINNERS OF THE FIRST ANNUAL John Todaro Memorial Writing Program

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

**Second Place:** David Manuel for  
*Breeding Fish the Natural Way*

**Third Place:** Joe Graffagnino for  
*Teleogramma Brichardi*

# Why Join an Aquarim Club

Contrary to popular belief, the main reason for joining a fish club is not the free cake and coffee. While there are free refreshments at meetings, and even great buys on products and livestock, the really great benefit is knowledge. Joining the Brooklyn Aquarium Society is a great way to learn how to raise and breed tropical fish. Experienced members pride themselves on teaching new hobbyists and sharing their expertise.

Established in 1911, the Brooklyn Aquarium Society is over 100 years old and growing. Many members have been in the club for decades, and they are still learning from each other. We have monthly expert speakers on different topics related to home aquaria. For a small membership fee, you get access to all this. Check out our web site at [www.basny.org](http://www.basny.org) for future events. — SM



# Classic Beef Heart Recipe

## RECIPE

### INGREDIENTS:

- 1-2 lbs. Beef heart, uncooked.
- Spirulina powder  
1 tbsp. per 1 lb. of meat
- Liquid vitamins  
1 ml. per lb. of meat  
(1 ml. = 20 drops)

### PREPERATION:

1. Trim beef heart of all fat, veins and tough outer skin.
2. Cut into 1 inch cubes
3. Combine ingredients in food processor, processing for about 1 minute.  
Check after 30 seconds.  
Adjust to bring particles down to 1/16 to 1/8 inches. Be careful not to liquefy mixture
4. Spoon ingredients into ice cube trays and freeze.

### FEEDING:

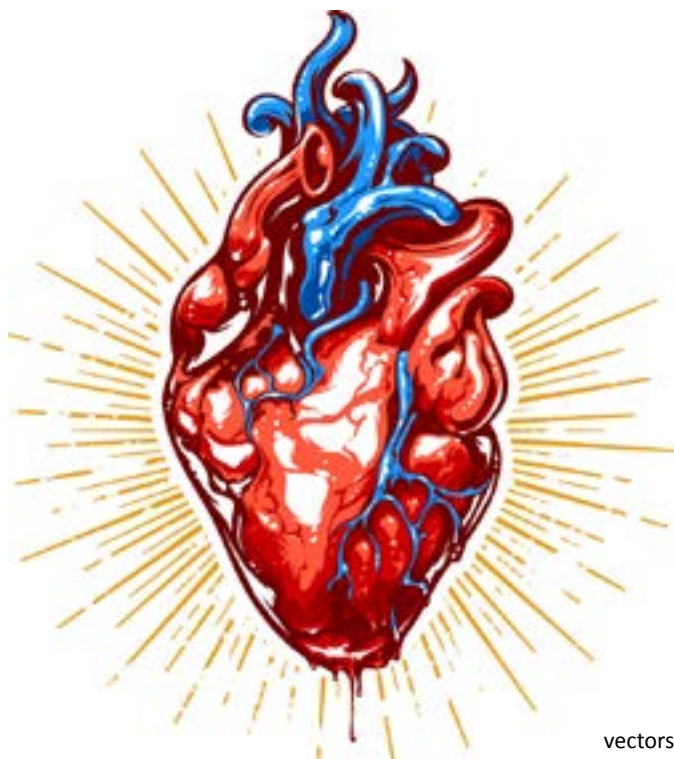
Grate frozen cubes into a cup. A revolving-drum type grater like a Mouli, works great. Feed by spooning small portions into the tank. Just about anything could be added to this recipe, but keep in mind that the more you add, the less beef heart by proportion in the final mixture. Never feed more than fish will eat in 5 to 10 minutes.

This version of the all time classic beef heart recipe comes from Gene Baudier, of the East Coast Guppy Association.

This is one of the staple foods he feeds his guppies, who it with gusto.

A great paste food for any fish that thrives on or needs a diet high in protein.

This is one of the most flexible recipes around. You can add veggies or baby cereal, extra vitamins, fish, shrimp or commercially prepared fish foods to enhance the basic recipe and make it your own.



vectorstock



# Club Exchange



By Alissa Sinckler

## **BUCKS COUNTY AQUARIUM SOCIETY 'THE BUCKETTE' MARCH 2022**

If you are looking for a good article on Rainbow Gudgeons, The Bucks County Aquarium Society Article “The Blue Gularis” By a writer unknown, it is an engaging read. Going into the appeal of this group of fish, as well as the writer's experience in breeding them.



## **GREATER CITY AQUARIUM ASSOCIATION 'MODERN AQUARIUM' MARCH 2022**

“Cone Snail Venom Could Lead to Future Diabetes Treatments,” is an interesting article from the University of New Hampshire. They share their research and findings on the venom of cone snails and how they believe it can be used for good in the fight for creating new ways for treating diabetes.



## **CENTRAL NEW YORK AQUARIUM SOCIETY "THE REFLECTOR" MARCH 2022**

The Central New York Aquarium Society article “The importance of cognitive stimulation for Aquarium Fish ” by Dr. Penelope Carbia-kolevski Is a good choice for a unique read. This article reminds us that fish are more than meets the eye — as well as tips and tricks to keep them entertained.

## **THE KITCHENER – WATERLOO AQUARIUM SOCIETY “Fins and Tales” March 2022**

The Kitchener — Waterloo Aquarium Society has an article called “Strange and unusual fish: Anableps the four eye fish” by Glenn Roberts is an interesting read. The author sheds light on the Anableps species, and how they get their name

111 Years of Educating Aquarists

**FRIDAY, April 8 @ 7:30 PM**

**THE BROOKLYN AQUARIUM SOCIETY**

PRESENTS

**Yemi Amu**

**St. Brendan's Catholic Church Parish Hall  
1202 Avenue O**



**AQUAPONICS —  
FARMING IN WATER**



<http://www.basny.org/>

For Information Visit **BROOKLYNAQUARIUMSOCIETY.COM**

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

# Tip of the Season

The weather's getting warmer, but be careful when putting plants and fish in outdoor ponds. We can still experience cold snaps, and that could retard growth of outdoor plants for the entire summer and kill your fish.

Many tropical fish breed in the spring. Spring rains change the pH of the water, which trigger them into breeding mode; it also lets them know spring is on the way and insects are soon to become readily available to feed their fry. If you have spring breeding fish, now would be the time for major water changes, and to feed fish more heavily. Of course, you can trigger breeding condition anytime in an aquarium. You just have to know what the signals are that gets your fish into breeding condition. Read about the fish you want to breed. Learn everything about them that you can. The more you know, the more successful you'll be.

Spring is one of the best times to check your local fish store to see what fish are coming in. As the weather gets better, shipments of fish arrive in better condition.

Check out society auctions. Local breeders bring fish bred over the winter to these events. Homebred fish are usually healthier than farm-raised fish that have been stressed out by a long trip in a styro from Florida and Far East farms.

This is also a good time for mail order fish eggs. Killifish and rainbow fish eggs travel well and have a much better chance of arriving in good condition. Good luck.

— *John Todaro (From BAS Bulletin May 2007)*



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# In-Person Meeting!

THE BROOKLYN AQUARIUM SOCIETY

PRESENTS

**Peter Izzo** OF *House of Fins*

**Keeping Freshwater  
and Marine Nano Fish**



**FRIDAY, May 13  
@ 7:30 PM**

# Corydoras stenocephalus

By Joe Graffagnino — BAS

I received a group of five fish (two females and 4 males) from a friend in the North Jersey Aquarium Society on September 21, 2014. I placed the group in a 10 gallon tank with riverbed gravel (#3), some java moss and a small corner filter. The temperature was 75 degrees Fahrenheit (24 degrees C), with a pH of 7.0. I did not check for water hardness. The group had spawned for my friend more than once.

They were fed twice each day with the first feeding in late morning/early afternoon of flake food and in the evening with frozen blood worms. On October, 23 the cory's laid eggs on both of the long glass piece sides with small amounts of eggs on both the front and rear short glass panels. I removed the eggs with a razor blade and placed them in a shallow plastic tray with an aerstone and acriflavin. After the first day I changed the water in the container by 60% with water from the parent's tank. The next day I did a 50% water change using water from my faucet at approximately the same temperature. I siphoned out any fungused eggs. On the third day, October 26, the eggs started to hatch. I moved the hatched fry to a five gallon tank with the water from the parent's tank. When the fry's egg sack was absorbed, after four days, I fed the fry frozen baby brine shrimp twice daily. I did 50% water changes every other day using water from my faucet at approximately the same temperature. After three to four weeks the fry were large enough to move into a 12 gallon grow out tank.

On November 28, the *Corydoras stenocephalus* started another spawn in their 10 gallon tank. I witnessed the spawn and took detailed notes as well as photographs. This spawn was 38 days after their last. The water temperature was 78 degrees Fahrenheit (26 degrees C) and the pH was 7.18. They began their spawn at 8:40 PM and it continued until 12:50 AM (4 hours and 10 minutes). While the spawn took place I inserted a pH monitor tube and they laid eggs on the tube! The eggs started to hatch



on December 1, 2014 at 11:50 PM.

On December 17 one female and several males started to spawn again. When completed they had laid 30 eggs. Five days later (December 22) they started to spawn again. I was not sure if it was both females. I counted over 100 eggs when the spawn was complete. On December 25 the eggs started to hatch.

I had bred different types of *Corydoras* species previously; specifically *Corydoras aneus* and *Scleromystax barbatus*. I noticed something different in the manner of egg fertilization with *C. stenocephalus*. The males were excited and continued to chase the much larger females, but they didn't follow the egg trail laid by the female. The males visually checked the eggs but stayed with the female. Occasionally the female and one male would be on the gravel and the male would turn his body and curl himself so that he was almost lying on his side with his abdomen facing the female. She would then go to his stomach area. I could see that she was taking something because her gills were pumping at a fast rate. She would then leave the male, go up approximately 75% of the glass side, and start laying eggs again. Then she would stop and return to where she started that egg trail and mouth each egg without removing it from the glass. I believe that the female took the milt from a willing male into her mouth and then applied the milt to the egg for fertilization. Perhaps this was why each time I had an 85-90% fertile egg count.



## Driftwood Can Cause Weird Fish Problems

By Joe Graffagnino — BAS

Did you ever have fish problems that didn't fall into the routine of fish sickness that was easily diagnosed? For quite a while I had strange symptoms in one large aquarium. I could not guess the cause of what was happening to my fish. Eventually it was diagnosed, but only after I lost fish and invested a lot of work. I learned some basic actions to take before adding anything to an established aquarium. Let me tell my "tale of woe" from the beginning so you can learn from my laziness and lack of common sense.

At a major fish convention a couple of years ago, I noticed a large piece of driftwood at a vendor booth. It was all branches, strategically placed together with disguised stainless steel screws. The piece was approximately 16 inches wide, 15 inches high and 2 ½ - 3 feet long. I thought this would be a perfect addition to

my 180 gallon (2'W X 20"H X 7'L) tank. The vendor explained that the wood came from the banks of rivers in Maine and the screws were all stainless steel. A wood patch was used to cover each screw top to provide that natural look. The piece was already bleached and cured so that I could put it into my tank immediately. I was grateful for that because I did not know how I was going to find a container large enough to hold a wood piece that large to bleach and cure with cold water for a week.

I returned home, rearranged the tank and placed the piece in the center. It was a beautiful addition to the tank, and the African cichlids enjoyed it immensely. For 3 months all was fine, then strange fish problems started appearing:

*Theraps nicuaraguense* started having gill infections. The bottom of the gills turned bright red and extended out of the gill covers. The

nicuaraguense also developed bacterial fin and tail rot.

*Tropheus moorii* (“ilangi”) developed “bloat” in three fish. Others started darting and scratching continuously.

*Aulonocara* “peacocks” developed cataracts over their eyes.

*Haplochromis nubilus* developed dark or black markings on their bodies and fins, along with cataracts over their eyes. These dark markings seemed to be moving. Two fish developed “pop eye” and died within two days.

*Sciaenochromis ahli* (“electric blue”) developed dark or black markings on their bodies and fins, but without cataracts over their eyes. These dark markings also seemed to be moving.

*Labidochromis caeruleus* (“yellow labs”) developed burns on their skin.

The disease ate through the outer skin and exposed the internal organs on a couple of fish.

Oddly, the exposed skin and organs never fungused.

At first, I didn't know what to blame for these multiple problems. Different species had different

problems and not every fish of that same species was affected. It appeared to be random, affecting certain fish, in certain species. It also seemed that fish from different areas were affected differently. Central American *T. nicuaraguense* had gill infections and bacterial fin and tail rot, but only in the mature fish; the younger fish of the same species had no signs of problems. The Lake Malawi *A. peacocks*, Yellow labs and Electric blues exhibited different symptoms, while the Lake Tanganyikan *T. ilangi* developed “bloat” and darting symptoms and from Lake Victoria the *Haplochromis nubilus* showed the markings and eye cataract symptoms.

I performed multiple water changes starting at 50%. I waited a week, then starting with antibiotics, I continued water changes but at 25- 30 %, while medicating the tank. I started with Aquarium Products “Aquari-Sol” and then Aquarium Pharmaceuticals “MelaFix”. “MelaFix” helped the *T. nicuaraguense* with their gill problems and the *T. moorii* with their bloat (those that had the “bloat” died and others did not catch it) and darting/scratching problems, but did nothing for the body markings and eye cataract problems. I then separated and isolated those fish with the same or similar problems and treated them with different medications. In all, I tried Mardel Laboratories “MarOxy”, for bacterial diseases, and Mardel Laboratories “Maracide”



for body flukes, flashing and external parasites. I also tried Aquatronics "Super Ick Plus" for scratching and darting and protozoan parasites. I finally used Aquarium Products "Clout". Despite these efforts, I was losing weak fish and not curing anything. I went so far as to give direct treatment baths. I even tried to scrape off what I believed to be the eye and body flukes. After discussing these problems and remedies with several members of our fish club, the most popular suggestion was an infestation of body flukes.

The remaining fish were weak from treatments, constant water changes, and Kasher salt treatments. The only recourse left to me was to use Furan, a very powerful medication. I could not subject them to this radical treatment, for I was certain that I would lose them all. I felt that I was a drug store for fish, yet almost nothing worked. I was adding vitamins to the tank, specifically B1 and B12 to help the repair of fins.

Club members recommend that I read an article in *Tropical Fish Hobbyist* (TFH) magazine, August 2001, titled "Flashing and Flukes" by Terry Fairfield. The article had some inferences that were similar to my fish problems. I emailed Dr. Fairfield and we discussed some possible remedies, but none of the diseases perfectly matched what he experienced. As an example, the fish that had the body and eye flukes did not scratch or rub to remove the parasite; that was strange. I also could not remove these eye or body flukes by hand or cyst bath; another oddity. Dr. Fairfield was against the use of all these medications. Instead, he valued the use of water changes, proper diet, an uncrowded tank, and the use of a diatom filter.

Meanwhile I was reading everything I could get my hands on in search of a solution for this crazy problem in my largest tank. The other tanks (10 –12 of them) did not exhibit any symptoms. I found an article that stated the symptoms my fish were having could have been caused by birds that eat parasitic fish. The bird droppings are then eaten by snails or are dropped onto wood. Aha! Now it started to make sense. This problem started

after I introduced the large wood piece into the aquarium.

I still didn't understand why there were so many different problems, but at least I had the cause of all of them. I then did what I should have done from the beginning: I got a large plastic garbage pail and I performed the bleach and water treatment to the wood piece. After 3 days of soaking in bleach and water I removed it and washed out the plastic pail, letting it sun dry. I then filled it up again with fresh water and placed the wood into it again for another week. It didn't quite last a week because on the 5th day the pail broke, possibly from the bleach or the pushing of the wood piece. I then let the wood piece sun dry for several days, making sure no snails or birds could get to it. I then re-introduced it to the same tank. I have not had a problem since then.

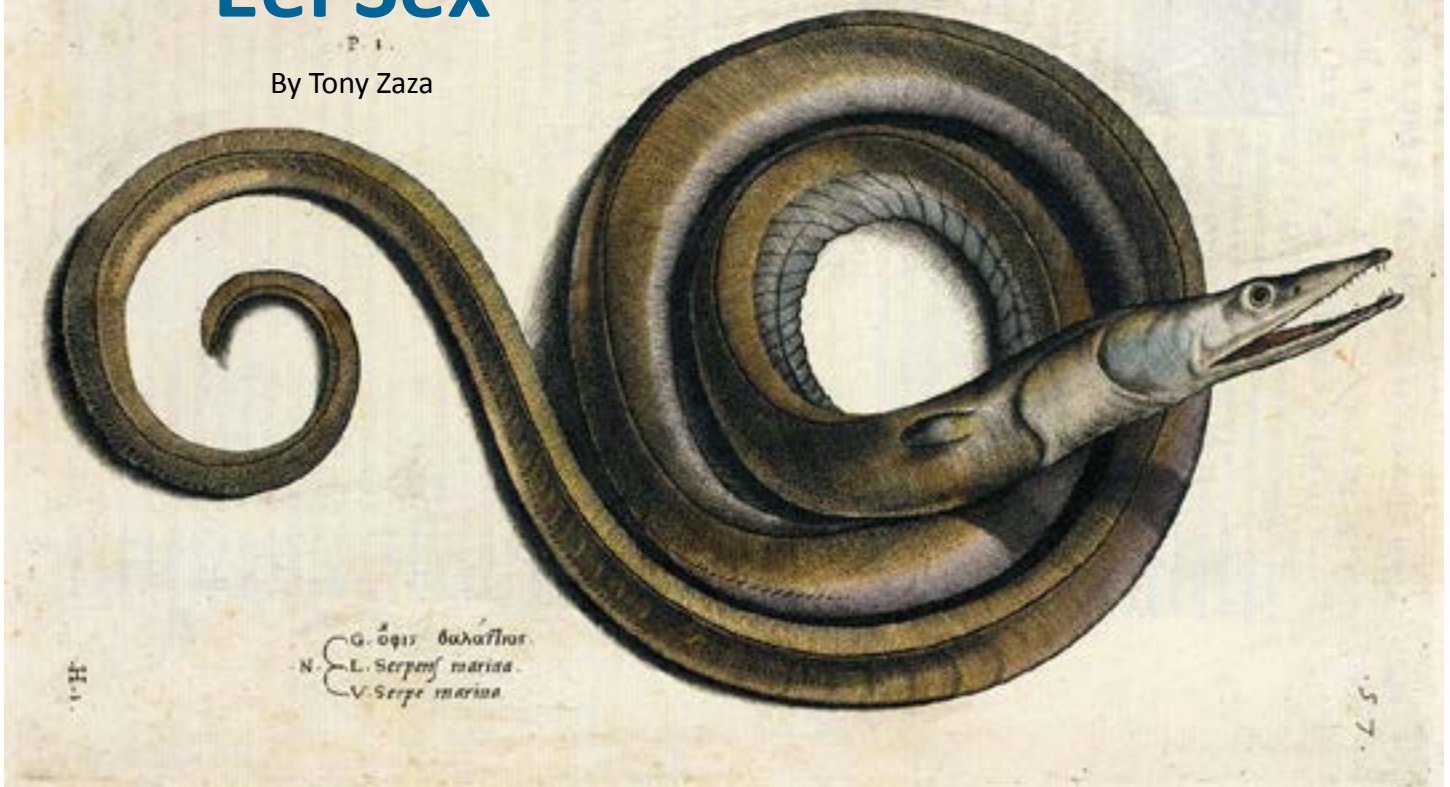
I called Dr. Dove at the New York Aquarium, an expert on these fish problems. He stated that he knew exactly what the problem was. He said that the black fluke markings and eye flukes were not body or eye flukes at all, but were a form of melanoma (skin cancer). He agreed that whatever was in the wood caused different problems with my fish. The good news was that it was not contagious to people or other fish, the bad news was that there was no cure for it. The sick fish are still living, eating and breeding. Their offspring show no signs of any problem.

Learn from my mistake: bleach any object you seek to place into your aquarium. Don't be lazy. Use common sense when buying objects for your aquarium in order to protect yourself and your fish.



# Eel Sex

By Tony Zaza



An eel, probably a serpent eel, from *Aquatilium animalium historiae, liber primus*, by Ippolito Salviani, 1554  
© British Library Board/Bridgeman Images.

In the spring of 1876, a young man of nineteen arrived in the seaside city of Trieste and set about a curious task. Every morning, as the fishermen brought in their catch, he went to meet them at the port. He bought eels by the dozens and then the hundreds. He carried them home, to a dissection table in a corner of his room, and all day he diligently slashed away in search of gonads.

“My hands are stained by the white and red blood of the sea creatures,” he wrote to a friend. “All I see when I close my eyes is the shimmering dead tissue, which haunts my dreams, and all I can think about are the big questions, the ones that go hand in hand with testicles and ovaries—the universal, pivotal questions.”

The young man, whose name was Sigmund Freud, eventually followed his evolving questions in other directions. But in Trieste, elbow-deep in slime, he hoped to be the first person to find what men of science had been seeking for thousands of years: the testicles of an eel. To see them would be to begin to solve a profound mystery, one that had stumped Aristotle and countless successors throughout the history of natural science: Where do eels come from?

The nineteenth century had brought Darwin and Mendel, Pasteur and Mendeleev, and a growing sense that scientists (a word coined only in the eighteen-thirties), with their studies and their systems and their microscopes, were at last equal to solving the great quandaries of the natural world. Questions that had befuddled mankind for centuries—where life comes from, what it is made of, how it changes, why it ends—were now seen as knowable, quantifiable, explicable. Just two years before Freud arrived in Trieste, the German biologist Max Schultze, lying on his deathbed, observed, perhaps wistfully, that he was leaving a world where “all the important questions . . . had now been settled.” All of them, that is, “except the eel question.”

What could be more ordinary than an eel? Not so long ago, European eels, *Anguilla anguilla*, were widely eaten. In Sweden, they might be smoked, braised in beer, or fried in butter; in Italy, boiled in tomato sauce; in England, jellied in stock, or fried with eggs into an elver cake. They were a simple and abundant food enjoyed by members of the poorer classes, like the Cockney woman described in *King Lear* who accidentally puts

them in a pie still alive.

People caught eels in brooks, rivers, lakes, the sea. They also caught them, inexplicably, in ponds that dried out and refilled each year, and that had no access to other bodies of water. They couldn't help but notice that the creatures seemed to have no ovaries, no testicles, no eggs, no milt. Eels were never observed to mate, and they sometimes seemed to issue from the earth itself.

The ancient Egyptians believed that eels were produced by the sun warming the Nile; Aristotle decided that eels emerged spontaneously from mud and rainwater. Pliny the Elder thought that new eels developed when old eels rubbed away parts of their bodies on rocks. As late as the eighteen-sixties, a Scottish author espoused an old belief that they began their lives as beetles. Eels were unaccountable, and so, writes the Swedish journalist Patrik Svensson in "The Book of Eels" (Ecco), an unusual and beguiling guide to an unusual and beguiling animal, it fell to us to try our best to account for them. "Some believed eels were born of sea-foam," Svensson writes, "or created when the rays of the sun fell on a certain kind of dew that covered lakeshores and riverbanks in the spring. In the English countryside, where eel fishing was popular, most people adhered to the theory that eels were born when hairs from horses' tails fell into the water."

The truth emerged only slowly, and was, in its own slippery way, stranger than the fiction. Careful observers discovered that what had long been taken for several different kinds of animals were in fact just one. The eel was a creature of metamorphosis, transforming itself over the course of its life into four distinct beings: a tiny gossamer larva with huge eyes, floating toward Europe in the open sea; a shimmering glass eel, known as an elver, a few inches in length with visible insides, making its way along coasts and up rivers; a yellow-brown eel, the kind you might catch in ponds, which can move across dry land, hibernate in mud until you've forgotten it was ever there, and live quietly for half a century in a single place; and, finally, the silver eel, a long, powerful muscle that ripples its way back to sea. When this last metamorphosis happens, the eel's stomach dissolves. The eel will travel thousands of miles on its fat reserves alone. At that point, its



A spotted eel, coloured etching, c.19th century. Wellcome Images.

reproductive organs develop for the first time. In the eels of Europe, no one could find those organs because they did not yet exist.

But, even as these answers were arrived at, "the eel question," as it was widely known, proved to be as changeable as the eel. It seemed to be forever unsolvable, for behind any eel answer there was always another eel question, shrouded by more layers of mystery.

"We know, then, that the old eels vanish from our ken into the sea, and that the sea sends us in return innumerable hosts of elvers," a Danish searcher, Johannes Schmidt, wrote. "But whither have they wandered, these old eels, and whence have the elvers come?" Schmidt became consumed by his questions. In 1904, he left his family in Copenhagen and set out to scour the seas for the very smallest of eels. For seven years,

he trawled the coasts of Europe, but found only larger larvae. For another three years, he enlisted shipping companies to net larvae as they plied the North Atlantic, and turned his own schooner west and south. Net by net, he mapped the ocean according to which parts of it contained eel larvae, and how large those larvae were, until the tiniest ones led him to their point of origin. It was a slow process, made slower by a shipwreck and a world war. Finally, nineteen years after he first set out, Schmidt announced his findings. "How long the journey lasts we cannot say," he wrote, summoning the grandeur warranted by the occasion. "But we know now the destination sought: a certain area situated in the western Atlantic, N.E. and N. of the West Indies. Here lie the breeding grounds of the eel."

Schmidt had traced the *Anguilla anguilla* to the Sargasso Sea, a sea within a sea, a garden of seaweed bounded not by land but by great currents of water. The American eel breeds there as well, and it is still something of a mystery how the larvae, all mixed together but genetically distinct, know which continent is their future home. The Japanese eel has its own breeding grounds, in the Pacific, and another famous freshwater eel, the electric eel of South America,

is not actually an eel at all; it's a knifefish. Schmidt's discovery was an answer. In the past century, no one has successfully challenged it. That European eels come from the Sargasso Sea remains the official word of science. But, as with that sea and the animal born there, the boundaries of this knowledge are fluid and strange. Many expeditions have followed Schmidt to the breeding grounds in the decades since, each with better technology than the last. They, too, have found plenty of larvae, but, when one expedition collected and examined seven thousand fish eggs, not one of them turned out to be from an eel. Scientists have put G.P.S. trackers on silver eels beginning their migration; they've used hormones to bring females into heat, transported them to the breeding grounds, and attached them to buoys to use their pheromones as bait. They have dropped microphones into the water and opened the stomachs of predators. And yet no one has ever seen *Anguilla anguilla* mating anywhere, or so much as set eyes on a mature eel, living or dead, in the Sargasso Sea.

TONY ZAZA  
giacomo45@earthlink.net

## Some Types of Eels by Animal Spot



# Moving My 240 Reef Tank

By Steven Matassa — BAS

A few months ago I received some bad news when I found out the sewer pipes in my basement were cracked and had to be replaced. If that wasn't bad enough, I needed to break open my tile flooring. Even worse, I had to move several fish tanks including my reefs.

First I needed to empty my 150 gallon African Cichlid tank, and rehouse about 30 fish. I moved furniture to make space and even had to get rid of a couch. There was just not enough room to work, some items had to go. Once this was done, I got started on a 240 reef setup. This consists of a 180 and a 60 cube main tank feeding into a 75 sump, so over 300 gallons of saltwater. I have coral I have raised from frags to very large pieces, some of which I have had for more than 10 years. Needless to say, I was afraid of moving them.

I used a 100 gallon Rubbermaid tub and a couple of 40 gallon tanks to temporarily house my livestock. I built frames to hold the lighting in place. I used most of the water from the existing setup, with some new water. Once all the livestock and rock had been moved, I set up temporary filtration.

Some of the coral were difficult to move. My very large green toadstool was the most challenging. It takes about a third of my 180 gallon tank. When I lifted it out of the water, I was surprised at how heavy it was. Most of the coral could be moved into small containers, but I didn't have a large enough container for the green toadstool. Even if I did, it would have been too heavy to lift. Since I was only moving about 6 feet away, I decided to just lift it out quickly to the new tank. Luckily toadstools are pretty hardy, and it was fine. Since I had raised it from a 1 inch frag, for ten years, I didn't want to lose it.

Once this was done I started to dismantle



the 240 setup, as it was too heavy to move. This system is all hard plumbed in place for about 6 years. As I dismantled it, I discovered some wear and tear, and had to throw out a 60 gallon cube with fragile seams.

Now I had to move all the livestock from the 100 gallon tub and the 40 gallon back into the 180, and keep the other 40 gallon tank set up for the time being. I can't stress enough how important it is to level your tanks. Unleveled tanks will cause stress on the seams and can cause leaks or, worse, blow outs. All this rearranging took about 3 days. I needed help with some of it. Just the empty 180 gallon tank and cabinet probably weigh over 400 lbs. I removed the sump and some of the plumbing, so if nothing else, the system got a good cleaning. I used 1 inch pvc pipe under the cabinet, so we could roll it. It was a lot easier than trying to lift and carry it. If it worked for the Egyptians, I figured why not for me!

Even though I was nervous with all the moves, I lost no livestock at all. I threw out almost all the sand, saving just a little in the new

holding tank for my Goby and Deresa clam. I had wanted to change the sand anyway; this was a good excuse to. I had black sand, which has metal in it and causes red slime algae. I will replace it with special grade live white sand, which is easier to vacuum than sugar sand.

Now that all the house drain pipes have been replaced, cemented and filled back up and the tiles all replaced, it's time to move the tanks back again. That means setting up the temporary tanks to house the livestock again. Then I will move the 180 gallon tank back and reset the whole system with a new 70 gallon tank to replace the 60 gallon one. With both tanks and the sump, the system is over 300 gallons. I want this to be the last time I move it, so hopefully everything works out.

Most people just see fish tanks, but anyone who has raised fish or coral for a long time knows that it's just not a tank. I wanted to make sure there were no casualties.

I wanted to use a good amount of saltwater from the existing tanks, so I kept doing water changes into the new tank for about a week. It's important to keep the water moving and oxygenated, so I kept a water pump and heater in the new tank. Now the new tank water chemistry should be the same as the old one, so there is no stress on the livestock. I was hoping it would not cycle again, so I used mostly old water, new live sand, and all the live rock. This makes for an easy transition, for all the fish and coral.

When the tank was about three quarters full, I added live rock and coral. This brought up the water level to almost full, and then I added the remaining new water to top off. I let this run for a day before adding the fish. Everything went pretty smoothly, and I lost no livestock in the move.

I had to redo most of the plumbing with

the new tank, which I was trying to avoid. Both tanks are plumbed into the same 75 gallon sump. While I had access to the ceiling and walls, I hooked up an automatic top off, running RO tubing from the RO reserve to the sump. This makes life a lot easier; no more buckets. I purchased two 55 gallon drums, one for the RO water with a float, and one for the saltwater on hand for water changes. I plumbed them so a valve and switch on the pump can move water from one tank to another, or transfer saltwater to the tank for water change.

Whenever I redo a tank I am always trying to make it easier to maintain. Whether it is redoing filters, plumbing, lighting or even a stand, the easier the tanks are to maintain the more often you will. I have two 7 inch filter socks in the sump that are very easy to change. I just



pull them out and pop in a new one. When I have about a dozen dirty filters, I throw them in the washing machine with just bleach, no soap. Big tanks or multiple tanks can use a lot of electricity, so I am always looking to reduce my power use. Installing new LED lighting and low voltage water pumps helped reduce my electricity demand.

Now that everything is back to normal, I can sit back and enjoy the view. Hopefully I never have to move it again.

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# Growing Plants in a Homemade Hydroponic System

By Richard Goodkind — TAG, photos by author.

The vast majority of plants placed in an aquarium grow emersed in nature. For most of the year these plants, which normally grow in tropical and sub-tropical regions, are only submersed during stages of seasonal flooding. As a result, most aquatic plants can exhibit two types of growth, depending on their environments, to survive these seasonal changes.

Completely immersed, the leaves and stems develop different structures and may not be recognized by the aquarist as being the same plant. Leaves that are completely immersed become more delicate, thin and even transparent in some cases. *Vallisneria* is an example of a plant species that is truly aquatic in nature. (Ref: *Aquarium Plants*, Christel Kasselman, Krieger Publishing Co. Malabar, Florida, 2003)

In view of these seasonal variations, I decided to explore the possibility of growing plants in an immersed state. A visit to the local hydroponic and hardware stores provided the materials I needed to build a viable hydroponic system. The initial purchase consisted of the following items.

1. Seedling heat mat
2. ½ inch PVC with an assortment of joint connectors
3. 360-degree rotating spray attachment
4. Hydroponic high dome and tray
5. Rock wool blocks and micro and macro plant fertilizers

6. Air and water pump with tubing
7. CO<sub>2</sub> set-up (not essential)
8. Large plastic tray to house hydroponic dome and tray
9. Light stand fitted with a T5- 6500K fluorescent tube
10. Two electric timers

Illustrations #1 and #2 show the fabricated PVC hydroponic set-up with the rotating spray attachment.

Three holes were drilled into the side of the large dome to accommodate the air, CO<sub>2</sub> and water tubing. The holes were reinforced with a



#1. Completed PVC hydroponic set-up.



#2. Close-up of rotating spray attachment mounted on ½-inch PVC pipe.

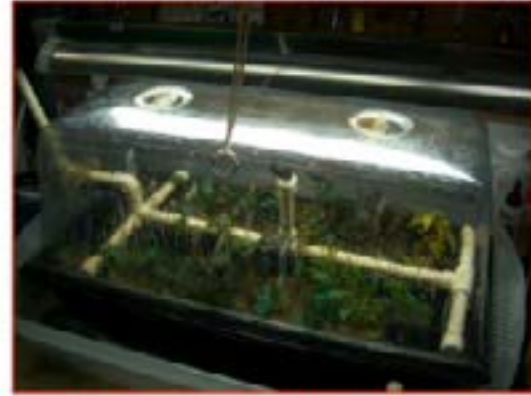


#3. Entire assembly without plants.

square acrylic sheet and epoxied in place. Prior to placing the dome overhead, the multiple compartment tray was filled with the rock wool blocks.

Plants purchased in the immersed state were subdivided and inserted into the rock wool in their individual trays. The water and air pumps were installed. The water pump was placed in a tank near the hydroponic system and furnished the water. CO<sub>2</sub> was employed in this system but was not used much of the time because the plants were able to consume CO<sub>2</sub> from the surrounding air.

The light connected to a timer was kept on for 12 hours a day. The



#4. Hydroponic system with plants, completely operational.

water spray's timer was set to mist the plants for one minute at 8-hour intervals. The plants were fed liquid micro- and macronutrients twice a week. Illustrations #3 and #4 show the working hydroponic system prior to plant placement and after plant placement, respectively.

At first, the air vents atop the dome were kept closed to contain the humidity. After two weeks, the plants adjusted to their environment and showed incremental growth. Starting at this point, one vent was kept slightly open. Illustration #5 depicts plant growth at one month. In three



#5. Plant growth at one month.

months time, the crypts were touching the top of the dome and ready to be placed in the aquarium.

Using this hydroponic technique, I have successfully grown the following aquatic plants.

1. *Cryptocoryne undulata*, *C. walkeri* and *C. wendtii*
2. *Anubias minima*
3. *Ammannia senegalensis*
4. *Helanthium bolivianum* 'Vesuvius'
5. *Helanthium tenellum*
6. *Hygrophila corymbosa* 'compact'

Once the hydroponically grown plants were placed in the aquarium, they transformed their leaf structure to the immersed form.

Hydroponically grown aquatic plants add another dimension to the planted tank hobby. The advantages



#6. Plant growth at three months.

of growing aquatic plants in this manner are:

1. It provides a more natural environment to experiment with plants that like to grow under these conditions.
2. It grows plants that are algae free.
3. It does not require significant maintenance time. 🌱





# Upside Down Catfish



## QUICK STATS

**Minimum Tank Size:** 30 gallons

**Care Level:** Easy

**Temperament:** Peaceful

**Water Conditions:** 75-82° F, KH 4-12, pH 6.0-7.5

**Max. Size:** 4"

**Color Form:** Black, White

**Diet:** Omnivore

**Origin:** Central Africa

**Family:** Mochokidae

The Upside Down Catfish is also known as the Blotched Upside Down Catfish and is from the rivers and lakes of Central Africa within the Congo Basin. It is one of the smaller Synodontis catfish, and is an opaque color with many black spots and markings. This species is an upside-down catfish, as it will hang in an inverted position, as well as feed from the surface of the water. These catfish will also feed upon algae that forms on the decorations and plants within the aquarium.

The Upside Down Catfish will appreciate a heavily planted aquarium of 30 gallons or more, with driftwood and crevices for hiding. Sensitive to nitrates, good water conditions are necessary. It prefers a current in the aquarium. It can be kept as a schooling fish or in an aquarium with other small Synodontis species.

The Upside Down Catfish is an omnivore and should be offered sinking catfish pellets, freeze-dried bloodworms and tubifex, plus a good quality flake food. It will also feed upon algae in the aquarium, and it is a good algae controller for a planted community aquarium.

# Lesser Known Livebearers

By Anthony Kroeger — BAS



**Perugia's Limia**  
***Limia perugiae***

**I** am partial to *Limias*. I feel they are very underappreciated and certainly deserve much more attention from aquarists. I have kept many species of *Limia* and have always been pleased with my results.

The *Perugia Limia* certainly falls into the category. Native to Haiti and the Dominican Republic, this fish grows to a maximum 2 3/4" inches in size.

I find their color pattern very appealing. The upper body is a honey brown color with a white throat and belly. The shoulder area, particularly in males, shows a golden/orange glow. The scales are edged in a metallic green. Their eyes are black with a silver iris. The caudal fin is a yellow/orange with a broad black trailing edge. The dorsal is very large and broad and is coal black with white stripes along the fin rays. This, as you can see, is a very pretty fish.

Usually it's available online and from specialty groups, and is reasonable in price. Even better, this fish is easy to keep and breed.

A 20-gallon tank is fine for a colony of 6 *Limias*. I use a sponge filter in their tank with gravel, hornwort and some floating water sprite. That's it! How simple is that? Always cover their tank; they are jumpers.

They like hard, alkaline water. I keep mine in hard water, pH 7.2 - 8.0, at a temperature between 75° - 80°F. They love larger volume water changes. I change 1/3rd of their water weekly. They become very active after water changes and their colors just seem to glow.

These fish eat any food offered. Be sure to give them their vegetables. I give mine boiled zucchini, summer squash, green beans, peas, spirulina and algae. This fish is a heavy feeder and needs to be fed often or they get skinny. I feed mine 4 times a day.

*Perugias* are very peaceful community fish. I've kept them with guppies and many other fish. They never bother anyone, and they don't even

chase guppy fry.

*Perugias* breed in typical livebearer fashion. 10 to 100 fry are born every 4 weeks or so. The fry eat frozen baby brine shrimp, crushed flake food and veggies initially. They can be left with the adults and in my experience they're very easy to raise.

Adding just a pinch of salt to their water will be very beneficial to them.

If you can't tell by now, I really like this fish. It has all the good attributes that an aquarium needs. I heartily recommend Perugia's Lima to everyone!

Until next time.

---

John Todaro - BAS

## SPECIES PROFILE

**Scientific Name:** *Limia peruviae*.

**Common Name:** Perugia's Limia.

**Family:** *Poeciliidae*.

**Distribution:** Dominican Republic.

**pH Range:** 6.8 - 7.5.

**Temperature Range:** 75° - 80°F.

**Hardness:** 30° dGH.

**Temperament:** Peaceful with other fish.

**Sex:** Full grown males have an orange chest. The gonopodium is black.

**Diet:** Will eat all foods offered. Should have some vegetables in their diet.

**Breeding:** Easy. Breeds in typical livebearer fashion. After 24 days gestation, female gives

birth to 10-100 young. Fry eat baby brine shrimp and crushed flake food.

**Remarks:** The species is hardy and longlived. They must have excellent water quality to grow to full size and show off their colors. Regular water changes every 2 weeks with the addition of salt will help promote their growth.

**Reference:**

- [www.fishbase.org](http://www.fishbase.org)
- *Baensch Aquarium Atlas*, Hans A Baensch & Dr. Rudiger Riehl, Vol 2., Page 730, Publisher, Hans A. Baensch, 1993



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

# Grading Yellow Shrimp

## *(Neocaridina davidi var. "Yellow")*



**QUIZ TIME:** Based on what you read, what is the grade of this yellow shrimp? You can find the answer at the end of this article.

So, you're looking for a shrimp that can be kept in small tanks, can handle a wide range of water values, is easy to breed, won't mind a few beginner mistakes and brightens up your aquarium with its coloration.

Sounds impossible, right? Not with *Neocaridina davidi* var. "Yellow", also conveniently referred to as the yellow shrimp. This yellow "sibling" of the more common red cherry shrimp is the perfect choice for everyone looking for that combo of easy care and great color. But... why are they colored

and priced differently?

*Note: this article is about yellow shrimp grading and doesn't cover what you need to know about caring for these dwarf shrimp. If you need some more info, have a look at the full yellow shrimp caresheet instead!*

### **Grading yellow shrimp (*Neocaridina davidi* var. "Yellow")**

If you've looked into buying a colony of yellow shrimp, you'll most likely have noticed that not all of them are the same. Some are almost translucent with a hint of yellow, while

others are entirely opaque with perfect lemon coloration. Why?

Dwarf Neocaridina shrimp like yellow shrimp are selectively bred from brown-greyish wild shrimp into the variety of colors available today. With constant selection, a completely opaque color can be achieved. This is considered very desirable. Thus, more translucent yellow shrimp will fetch less money than opaque specimens.

Opaque yellows aren't necessarily better or healthier; shrimp keepers just consider them nicer to look at. You don't have to buy high grade shrimp. Even if you're low on funds, you could always be patient and invest time to selectively breed your colony for less transparency yourself.

### **Yellow Neocaridina shrimp grading guide.**

We know that more opaque shrimp are more desirable than translucent ones. But how do you actually go about grading them? The guidelines and yellow shrimp grading chart on the next page should help you figure things out.

There are no definitions. Not really, anyway. Unlike the extremely popular red cherry shrimp, which has at least five different grades with respective names and guidelines (that you can find here), the grading system for yellow shrimp is still a vague. We divide shrimp in three different categories: "high," "medium" and "low."

Opaqueness determines grade. A high grade yellow shrimp is entirely yellow without any transparent splotches. Even its legs won't show signs of white. A medium grade yellow shrimp is still nice and brightly colored, but there are a few translucent spots. Notably, the "underbelly" will be less intensely colored or splotchy, and the legs might be more of a candy-cane pattern with yellow and white than 100% yellow. Lastly, low grade yellows are often more translucent than they are yellow. While there is still color, most of the shrimp is see-through, including the legs.

Hue can vary. You might have noticed that no

two yellow shrimp colonies are exactly equal in color. This doesn't matter; grade is determined by opaqueness rather than hue. Some yellows are more neon, while others show hints of green or orange.

Neocaridina shrimp can be selectively bred to have a light-colored stripe run along the back (and some shrimp show it at random). Like hue, whether you find this desirable or not has more to do with personal preference than grade. These "golden backs" still adhere to normal grading rules.

As you likely know, female dwarf shrimp are larger and often more opaque in color than males (if you're not familiar with sex differences in shrimp the chart on the next page might be helpful). In high grades, both males and females are usually opaque in color, though this is not always the case. It's possible for a female to fall into a higher category than the less intensely colored male.

### **Buying yellow shrimp?**

Looking to start your own colony of yellow shrimp? The Shrimp Farm sells yellow shrimp and ships them right to your doorstep - you can get your starter colony of 10 shrimp here.

QUIZ ANSWER: the shrimp in the photo is a medium grade yellow shrimp. Note the "candy-cane" legs that feature both yellow and translucent patches as well as the see-through spots on the body.

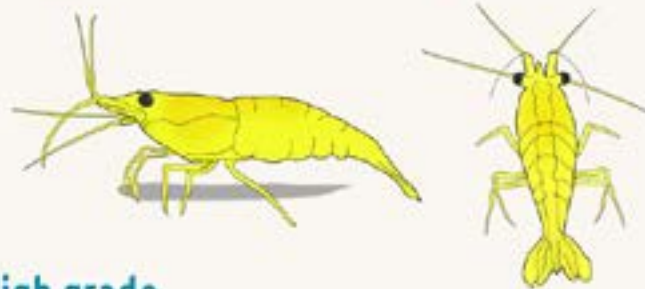
# Yellow Shrimp (*Neocaridina davidi* var. "Yellow") Grading chart



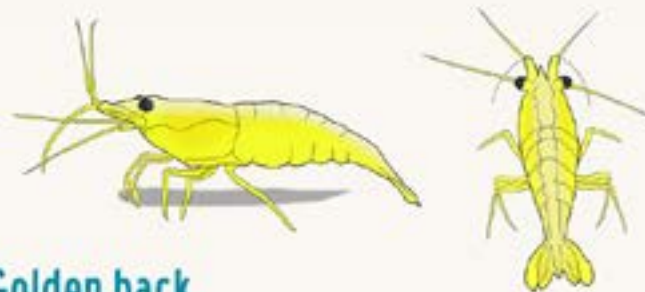
**Low grade**  
Mostly see-through, some yellow



**Medium grade**  
Mostly yellow, somewhat see-through



**High grade**  
Opaque, intense yellow coloration



**Golden back**  
Light yellow back stripe, can occur in all grades



Hue can vary. Color density determines grade, not color itself.

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

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

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- Depth of research – research articles to include citations and footnotes to sources if any.
- Use of scientific names for fish, plants and corals.
- Spelling
- Artwork &/or photos submitted with the article will receive extra points if related to the article or deduct points if incorrect or unrelated to the article.
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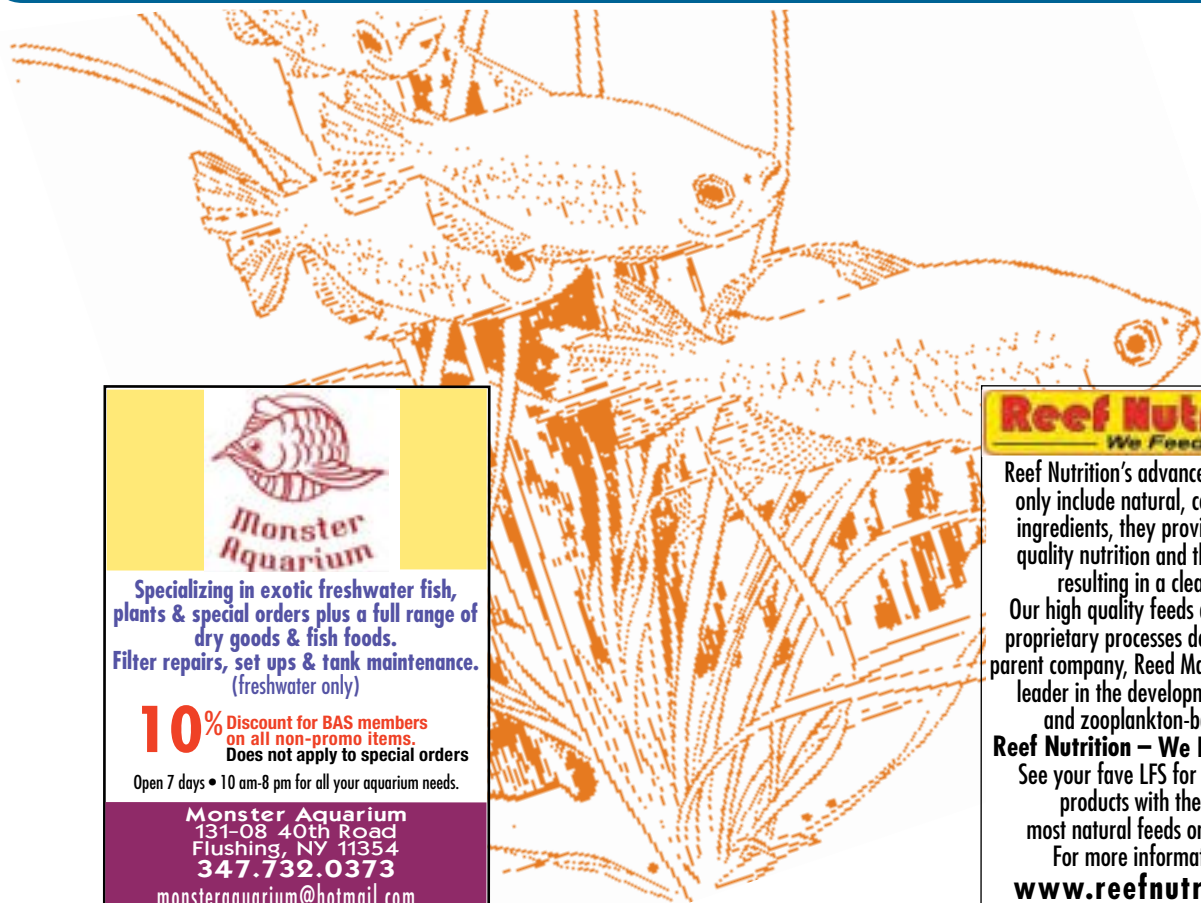
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# BENEFITS OF MEMBERSHIP IN THE BROOKLYN AQUARIUM SOCIETY

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

## **YOUR MEMBERSHIP BENEFITS INCLUDE:**

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

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

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

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

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

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

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

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

**Video Tape Library:** We have a video tape library on different aspects of fish care and breeding plus past BAS Speaker Events. These video tapes are available via our BAS Forum. You must be a member of our Forum. Membership is free.

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

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

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## Membership & Renewal Application Brooklyn Aquarium Society

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

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**TYPE & LENGTH of MEMBERSHIP:** (CHECK ONE)

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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: \_\_\_\_\_  
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