



AQUATICA

THE ON-LINE JOURNAL OF THE BROOKLYN AQUARIUM SOCIETY
VOL. 30 MARCH ~ APRIL 2017 No. 4



African Jewelfish - *Hemichromis bimaculatus*



106 YEARS OF EDUCATING AQUARISTS
AQUATICA
VOL. 30 MARCH - APRIL 2017 NO. 4

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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

MAR 10 Emily Voigt - The Dragon Behind The Glass ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

APR 14 Todd Gardner - Long Island, NY: An unlikely hotspot for marine ornamentals ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction

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

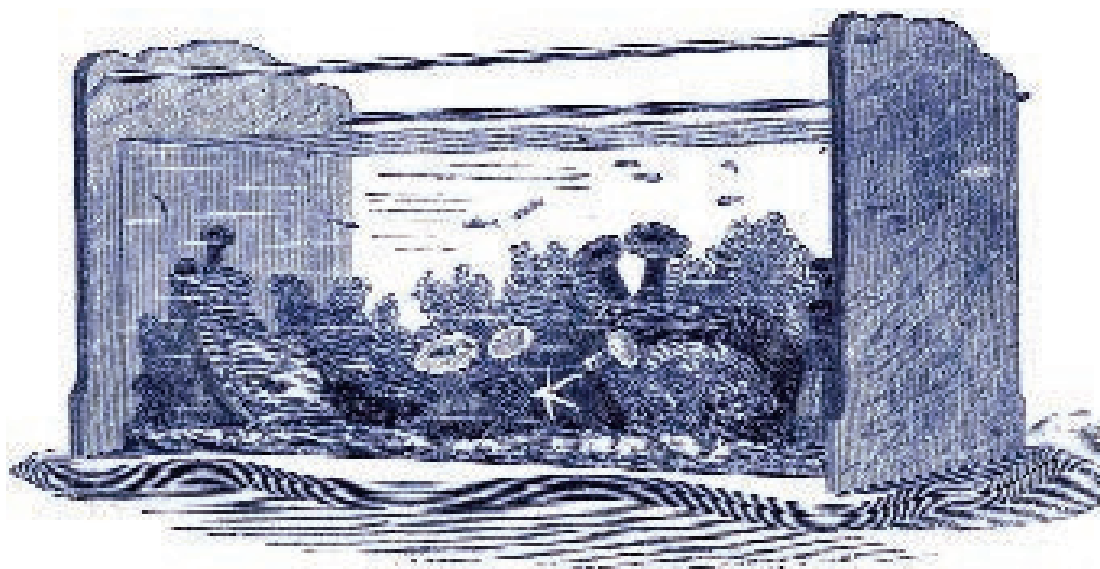
No meetings July & August

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



*Part 3*

THE RESPONSIBLE AQUARIST

Eurasian water milfoil
Myriophyllum species

“Not in my back yard!”

That’s what many people think of the problem of non-native releasers of ornamental aquarium fish and plants.

Problems with such species only occur where it’s warm; we keep tropicals right? They would never survive winter’s snow and ice!

Well, this is partially true. Brazilian peacock bass would certainly not survive freezing all winter. At least not under normal circumstances. However, many of the “tropical” fish and plants we keep are not exactly “tropical” fish and plants in nature. Some, in fact, can survive a lot of cold.

Look at bloodfins, white clouds, Texas cichlids and many *Gymnogeophagus* species. These are not “tropical” fish “*per se*” but rather temperate environment fish.





Of course, aquarium plants are the same way; many aquarium plants are native to the U. S. and survive freezing temperatures regularly. *Bacopa ludwigia*, creeping charlie, vallisneria, anacharis and many other popular aquarium plants do this.

Parrots feather is a very common aquarium bunch plant, cheap and readily obtainable, but this common eurasian milfoil can cause damages of an extensive nature when released into the water environments in the U.S.A.

Pretty much every aquarist has kept this plant at one time or another.

A grass green color with flat feather like leaves arranged in a circle around the plant's stem: this plant is easy to identify. Small roots anchor this to the substrate. Small pink flowers again arranged around the stem extend above the waterline. So what damage can a small 6" - 10 " bunch of eurasian milfoil do?

Well, if it stayed at 6" - 10", probably not very much. But milfoil doesn't stay small. It grows and grows, becoming a dense choking monster weed.

Milfoil can grow up to 20' feet high. That's as tall as some houses and it does not grow alone. It grows in bunches, masses and mounds, etc., and milfoil grows fast! An inch a day per stem! This plant

can grow so thick, it can foul props on boat motors and stop them.

There was an article in northern New York (you know the North Pole part of New York State) where a lake had 40 acres of milfoil hand removed by divers. The plants weighed 18 tons. That's a lot of bunch plants! Oh yeah, and they still had 20 acres more to remove



before the water got too cold in the fall.

The milfoil was so dense, one half of the lake was closed to fishing because any boat that tried to power thru the milfoil got stuck.

Any broken piece of stem or leaf can generate into a new milfoil plant. So as a result, after this lake is cleared by fall it must be chemically treated with aquatic herbicide to kill any regenerating leftover milfoil and even then divers must swim and dive the area to hand pull any stragglers next summer.

Needless to say this costs

money - taxpayers' money! Your taxes! Millions of dollars per year.

And that does not count the cost of numerous boat inspection sites to insure no boat accidentally transfers a tiny bit of milfoil from an infected lake to a clean lake.

Yes, milfoil does provide some cover for fish, but it destroys the habitat by growing so fast and so dense it literally covers and smothers any native plants.

This is a problem that did not have to happen. Never release any aquarium plants into nature in the U.S.A.

If you have extra of any aquarium plant, never flush it down the toilet. If you cannot give it away, kill it by drying it in the sun or bake it in the oven until bone dry. Then crumble it up in a

plastic bag, seal the bag and throw it in the garbage.

Never release any aquarium plant into native U.S. waters.

Be a responsible aquarist!

Next time, we will look at marine aquariums. 

Happy fishkeeping

7on4



MY EXPERIENCES WITH THE AFRICAN JEWELFISH

Hemichromis bimaculatus

I first came across these fish in a pet store, but at the time I had no room in my tanks for a new fish that was semi-aggressive. I thought that the fish were beautiful and they really intrigued me. I planned to one day go back and purchase another tank for these guys or find some way in which to obtain these fish.

Well, what happened next was sheer luck. I was given a 10-gallon tank from a friend who no longer needed the tank. Lucky for me another tank, wife on the other hand was not too happy, but it was small so I was able to keep it.

The next lucky thing was at the next general meeting of the BAS, a member, **Vinny Babino**, brought in a bunch of baby African blood red Jewelfish to the auction. I said this is my chance. I have a small tank ready to go and these are the fish I want. So I won the bag and my adventure began.

I placed these small fish, not even an inch long, in the 10-gallon tank. I fed them frozen baby brine shrimp and flake foods. They ate just about everything in sight including my fingers, if they were in the tank. A couple of months went



by and the fish began to grow nicely; they're about 2" inches in length now. There are six in total. I choose to move them to a 29-gallon tank that had previously held a discus. Unfortunately I lost that guy; a shame, it was a very nice fish. So I moved them to the bigger tank so they could grow bigger. Soon after that, Vinny brought me a present:

The parents of the six Jewelfish I had been raising. I was so excited I almost jumped out of my pants. We talked for a while and I can't wait to get them into their new home with their babies. I placed them in the tank later that night and it was like a reunion, all of the fish swimming around, it was fun to watch.

A week later I noticed the parents were rummaging around the tank moving plants and other stuff. I never would have guessed that they were getting ready to spawn. I did a water change the day they spawned. I did something a



"I did something a little different this time when I added the water back in. I made the temperature of the new water colder than the tank water a little trick I learned from a good friend. And sure enough, 8 hours later they were spawning on one of the tanks rocks."

little different this time when I added the water back in. I made the temperature of the new water colder than the tank water, a little trick I learned from a good friend. And, sure enough, 8 hours later they were spawning on one of the tank's rocks. Unfortunately for me I left the eggs in the tank and the parents ate them.

This has happened twice. After that, the fish took a hiatus from spawning which I found out is quite normal. So I have been doing some research to prepare for the moment they start up again. Here is some information I got from AquariumFish.com.

The Jewelfishes from Africa are one of the most beautiful, and most bellicose of the cichlids. While *Hemichromis bimaculatus* was the original Jewelfish introduced into the hobby many years ago, there are now a number of other species available. They all behave the same and require the same conditions. Being from western Africa, they need softer, more acidic water than the cichlids of the rift lakes

in eastern Africa.

This is definitely not a community fish. In fact when they mature and most especially when they are breeding, there is virtually no other fish that can be in the tank with them. But their beauty and behavior make




it worthwhile to consider keeping a tank just for them.

Jewelfish breed in the typical cichlid manner, laying a larger mass of eggs on a flat surface on the bottom of the tank and defend the spawn and the babies against all comers. When they are in breeding color, the jewelfish are absolutely stunning - the reds become incredibly intense and the spangles of the other colors give them an almost psychedelic appearance.

Breeding begins with the fish tearing and digging up the entire tank. This is part of their breeding behavior. Give them plenty of sand and some larger flat rocks - they will arrange things to their liking. Forget about plants. The pair will go through a repertoire of spawning behavior consisting of jaw-locking, wrestling and other tests of each other. When they settle down to breed, they will allow nothing in the tank with them.

Feeding is easy: they will accept most flake foods or frozen foods. They do best on meaty foods, so try to offer them some pieces of shrimp or fish. Their tank should have a good power filter on it, as they eat a lot, and are quite messy and need good water conditions.

Not a fish for everyone, but if you can dedicate a tank to them, you will be pleased that you did.

This information is based on how I feel towards these amazing fish. 

**Emily Voigt**

NEW YORK POST, SUNDAY, JUNE 5, 2015



THE ASIAN FISH WORTH \$300K RARE PET “DRAGON” SPAWNS NIP-TUCK OPS, COUNTERFEITS, THEFTS – AND EVEN MURDER

With exacting precision, the surgeon inserted the scalpel above the eyeball and cut out a snotty deposit of fatty tissue. The routine eye-lift was nearly complete when suddenly the patient awoke, suffocating, and began to flop about on the table. The audience gasped. Knowing time was of the essence, the surgeon scooped up the patient in his arms, raced across the stage, and dropped her into a tank of water. She revived.

Because she was a fish.

Yes, fish eye-lifts exist. As do fin jobs and tail tucks. The operating theater was a mall in Jakarta, Indonesia, where a pet expo was underway. As for the patient, she survived, her formerly droopy eyes now bright and perky.

A good thing, too, as this was no ordinary goldfish but rather an Asian arowana, the world's most expensive aquarium denizen, rumored to sell for as much as \$300,000.

In Chinese, the creature is known as *lóng*

yú, the dragon fish, for its sinuous body plated with large scales as round and shiny as coins. At maturity, the primitive predator reaches the length of a samurai sword, about two to three feet, and can be red, gold or green. A pair of whiskers juts from its chin, and its back half ripples like the paper dragons in a Chinese New Year parade. This resemblance has spawned the belief that the fish brings good luck and prosperity — that it will even commit suicide by vaulting from its tank, sacrificing its life to save its owner.

Protected by the Endangered Species Act, the Asian arowana cannot legally be brought into the United States as a pet, though a black market thrives from New York to Los Angeles. As early as the 1990s, one Wall Street banker broke down in tears when authorities confiscated the illegal pet fish whose dark-alley appeal he couldn't resist.

More recently, in 2012, a smuggler landed behind bars at the Metropolitan Detention Center in Brooklyn, the same federal prison that once housed Gambino crime-family godfather **John Gotti Jr.** and al Qaeda member **Najibullah Zazi**, mastermind of a plot to blow up the New York subway system.

Overseas, however, the species is an openly coveted commodity in a legitimate luxury



market. Virtually depleted from the wild, Asian arowana are bred on high-security farms in Southeast Asia and injected with traceable microchips. Many of these facilities have nested walls, watchtowers and dogs that prowl the perimeters at night to protect against marauding fish bandits.

Singapore, which boasts one of the lowest crime rates in the world, once suffered four arowana heists in a single week. One thief punched out an elderly woman as he made off with her prized fish in a sloshing bucket.

In Malaysia, five arowana stolen from a woman's house were reportedly worth more than all her other possessions combined. Meanwhile, in a shocking act of violence, a 31-year-old aquarium shop owner was stabbed to death and nearly beheaded — just for his fish.

Despite this dark criminal underbelly, the larger picture of the hobby looks less like the illegal drug trade and more like Manhattan's overheated art scene, complete with record-breaking prices, anonymous buyers, stolen specimens, unsavory dealers and even clever fakes.

COLOR

Can be red, gold, or green. The classic model - the "Ferrari of fishes" - is the Super Red from a single lake system in the heart of Borneo.

BODY

Ideal body shape resembles a chopping knife. Asian arowana grow up to three feet in the wild - the size of a snowshoe - but are usually smaller in tanks.

EYES

Large peepers that follow you. For fish that suffer from "droopy eye" a common affliction among arowana kept in tanks - eye-lifts are a popular cosmetic surgery.



TAIL

Its blackend resembles an opened fan.

FINS

Big "finnage" is of the moment.

SCALES

Large, round coin-like scales.

JAW

Dragon-like barbels. If a fish has "PLJ," a protruding lower jaw that makes it look pouty, it may be a candidate for a chin tuck.

TONGUE

Long bone of a tongue used to seize prey. As pets, arowana are typically fed live fish and insects. Cockroaches are a healthy treat; mealworms a guilty pleasure.

In 2009, 10 rare albino arowana traveled via police escort to the Aquarama International Fish Competition in Singapore — the aquatic equivalent of the Westminster Dog Show — where armed guards stood watch to prevent anyone from adding poison to the tanks.

The breeder of these ghostly mutants, a Malaysian entrepreneur named **Alan Teo**, claimed that a prominent member of the Chinese Communist Party had recently bought one for \$300,000. He said another had sold to a Las Vegas casino baron who requested it be shipped to



Canada, where, unlike in the United States, the species is legal. A third belonged to a Taiwanese plastics magnate who made his fortune manufacturing toothbrush bristles.

"Some people think it's just rumor, but it's true," Teo said of his unlikely tale, holding up his hands to demonstrate how they had trembled the day he installed an albino arowana in the private chambers of the Sultan of Johor — a man notorious for having allegedly murdered a golf caddie who snickered when he missed a hole.

Alas, verifying who paid what for which fish is like authenticating the inflated prices that art dealers routinely report — all but impossible.

"To be fair, not all arowana cost that much," admits "**Kenny the Fish**," an eccentric Singaporean kingpin at the center of the glamorous world of Asian aquaculture.

A chain-smoking millionaire notorious for posing nude behind strategically placed aquatic pets, the Fish's real name is **Kenny Yap**, and he is the executive chairman of an ornamental fish farm so lucrative that it's listed on Singapore's main stock exchange. The national press once dubbed him one of the city's most eligible bachelors and called for him to host a spinoff of **Donald Trump's** reality show, "*The Apprentice*."

As Yap explains, most dragon fish sell around the age of 6 months when they're roughly the length of a pencil and typically fetch \$1,000 to \$2,000 apiece.

"People want to rear them from small to cultivate a certain kind of relationship," he says, noting the fish can live many decades — no one really knows how long, though they often die prematurely as pets.

In the past, Yap has told the press that an arowana can be trained like a dog or cat to "stay by the owner's side when he is unhappy." (Never mind that it's confined to a tank.) The flip side to this intimacy is that the fish is prone to temper tantrums and can behave "like a spoiled child."

Willie Si, otherwise known as "**Dr. Arowana**," the father of fish plastic surgery, agrees. A Singaporean car mechanic, Si placed a classified ad in the early '90s seeking "defective and damaged arowanas" and then set about tinkering with these fixer-uppers, snipping their tails to look like chrysanthemums. Eventually, he pioneered the use of diamond-cutting tools to remove fungal growths from fish eyeballs.

Bad blood over botched surgeries ultimately caused Si to close shop and restrict himself to phone consultations. When clients call worried that their arowana isn't eating, he asks them to consider what they might have said to inadvertently insult their fish.

"Don't panic," Si advises. "Talk to the fish. Say you made a mistake. The next day should be OK."

You might expect a creature that's so hot among feng shui enthusiasts — and reputedly prized by yakuza, members of Japan's extensive organized crime syndicates — to have a deep history of mythological significance in Asian cultures. Not so. Just a few decades back, the species was an ordinary fish that locals ate for dinner.

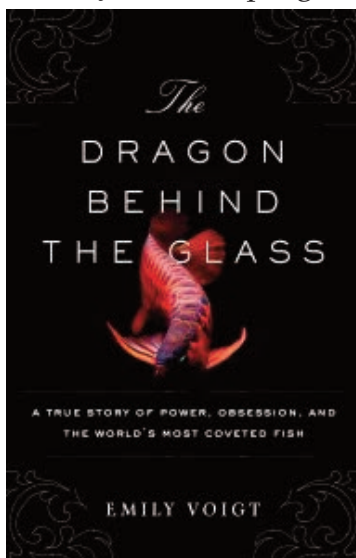
Only as its swampy jungle habitat began to vanish, and an international trade ban seemed to reinforce the perception of its rarity, did the species transform into a status symbol and luxury commodity around 1980. Now the idea of eating the Asian arowana is preposterous to most.

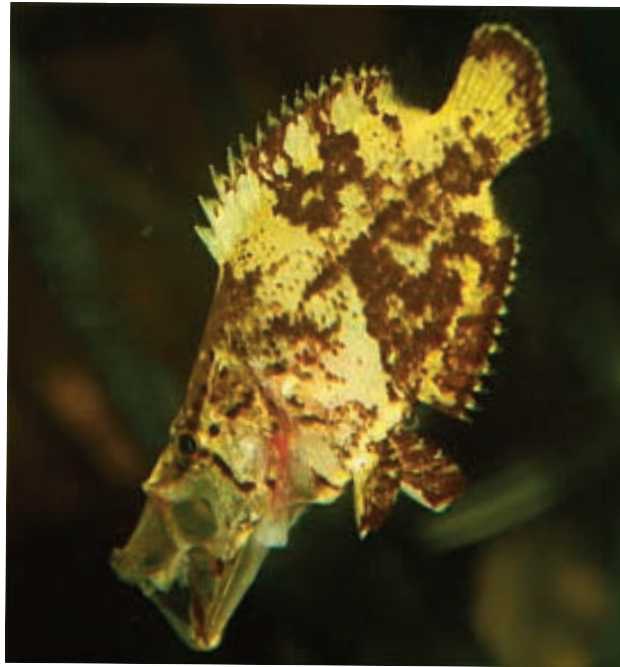
Still, rumors persist that Chinese tycoons pay huge sums to dine on the endangered species. Helping investigate these claims, an interpreter

in Guangzhou could hardly keep a straight face while requesting the fish at a seafood restaurant.

"It's like asking to eat something inedible — like an iron," explained the giggling young man, whose favorite dish was dog. 🐕

Emily Voigt is the author of "*The Dragon Behind the Glass: A True Story of Power, Obsession, and the World's Most Coveted Fish*" (Scribner), out now.





OPEN WIDE & SAY AHHH

Keeping Leaf fish in the Aquarium

Monocirrhus polyacanthus

I like odd fish! The weirder the better! leaf fish certainly fill this requirement.

Usually when people look at a tank of them they ask "Where are the fish?" That's how well camouflaged this fish is and how well its name suits it.

Native to the Rio Negro, Northwest Amazon and West Guyana, the leaf fish is a member of the Nandid family and grows to about 3 ¼ to 3 ½ inches.

The body is a pointy egg shape. colors are light, dark and chocolate brown marbled, which the fish can darken or lighten at will. Three dark lines radiate out from the eye and usually along the lateral lines, suggesting veins in a leaf. The

lower lip has a distinctive protruding barbel which looks like a leaf stem. A gold stripe running from the snout along the nape and upper dorsal fin edge can be shown anytime the fish so chooses, basically turning it on or off. The very ends of the dorsal and anal fins are completely clear. These move rapidly to propel the fish. The caudal is always clamped shut completing the leaf effect.

So what do you need to keep leaf fish?

Well, in a word: guppies! Feeder guppies! and lots of them! This fish refused all prepared foods! Do not waste your time and money trying to feed it with prepared foods. It eats live food only. Live dish! That means feeder guppies or small rosy red! Leaf fish can eat their weight in live food every day! I feed them by adding 25 guppies in their tank, replenishing them as the leaf fish eats them. This is a gape and suck





predator. It will drift up to the guppies, open a huge trumpet/landing barge mouth and suck the guppies in. It is amazing watching this fish stalk its prey. Only then will leaf fish become active. Leaf fish can be kept with similar size peaceful fish, but because of their special feeding needs they are best kept alone. Leaf fish are not active and usually just "drift" along. A 20-gallon long tank, well planted with a sponge, sub-sand or small power filter is fine for 5 fish. This fish does not need, like, or want strong current. Make sure your leaf fish are all the same size; they gladly eat smaller specimens of their own kind too! They seldom jump, but still you should cover their tank, just to be safe.

Warm, soft, acidic water 77° - 82°F is best. Change 30% of their water per week.

Leaf fish have been spawned in the aquarium. Usually eggs are laid under a broad leaf such as an Amazon sword plant. The eggs are guarded by the male and hatch in 3 - 4 days at 82°F. Like their parents, the fry eat only live food. Start them on live baby brine shrimp. The fry must constantly be segregated for size so they do not cannibalize each other.

This fish is not commercially bred. Almost all specimens sold are wild caught imports. As such, the price is usually moderately high. Better stores and online sources carry this fish on occasion, but it's difficult to find.

If you have lots of guppies and want something really unique, try leaf fish.

Happy fishkeeping.

70n4

John Todaro - BAS

SPECIES PROFILE

Scientific Name: *Monocirrhus polyacanthus*.

Common Name: Leaf fish.

Distribution: Brazil, Colombia, Bolivia, Peru and Venezuela.

pH Range: 5.0 - 6.8.

Temperature Range: 73 - 84°F.

Water Hardness: 1 to 10° dGH.

Size: 4" inches.

Temperament: May be kept with medium-sized loricariids and armoured catfish without too many problems.

Sexing: Difficult to sex. The female is plumper when full of eggs.

Diet: Carnivorous: will only accept live food. When small, they may accept live bloodworm and small earthworms. Do not keep this species if you're not willing to provide a constant supply of live feeder fish, they can consume its own body weight daily.

Breeding: Can be achieved in captivity. The breeding tank

should be thickly planted with broad-leaved plants with soft, acidic water (pH 6.0-6.5, 1-5 dH). It should be warm (above 77°F) and dimly-lit. A single pair should be conditioned with lots of live food. Up to 300 eggs may be laid on the underside of a large leaf or overhanging rock. The male tends them, using his fins to fan them. Eggs hatch in 3-4 days. Removed the male. Fry will take brine shrimp nauplii as soon as their yolk sacs are absorbed.

Remarks: Fry should be fed the fry of other fish as they grow. They can eat incredible amounts for their size and must be separated as differing growth rates, or they will predate upon their siblings. Maintaining high water quality is essential or there will be many losses.

Reference:

Seriouslyfish.com





Part 4

Terrific Tetras

Lemon Tetras

Hyphessobrycon pulchripinnos



Shine/glow when they are happy. The lemon tetra is one of these fish.

Native to central Brazil, this beautiful tetra grows to 1 ½" inches or so.

Lemon tetras are commonly available in all pet shops at very reasonable prices. They are commercially raised in Florida and the far East.

This beautiful tetra has a semi-transparent lemon/golden honey body color. A faint black shoulder bar exists in some but not all lemon tetras. The long anal fin is golden with a canary yellow leading edge. Tipped with white, the trailing edge of the anal fin is edged in a wide coal black stripe. The dorsal is body color, the caudal is usually clear. The eye is black with the lower part of the iris, silver. The upper eye is fire engine red, when in good condition. This is a very striking tetra indeed!

Lemon tetras are excellent community tank fish. They mind their manners.

Lemon tetras do swim around quite a bit, so be sure to give them a bit of space. I recommend a 20-gallon long for a school of 6. Always keep this tetra in a school. It will not display its best colors otherwise. Make sure you decorate their aquarium with some swimming space free of plants in the

center. That way you can enjoy them better. Although not an "in your face" fish, like bettas, they do strut their col-

ors for you.

Lemon tetras can tolerate most water but really look their best in soft, acidic water; 6.8 pH suits them nicely. Add some peat moss or dried oak leaves to their filter so their water turns the color of tea; they'll really thank you by displaying their best color.

I use black substrate and a black background to bring out the best color in these fish.

Lemon tetras love and need a well planted aquarium to feel comfortable. Natural or artificial plants are fine. Be sure to add floating plants too.

I like to use Amazon swords, crypts, Java fern and water sprite. Lemons are hardy fish and will live for years in this environment.

A small power filter and aquarium cover complete their housing needs. Lemons are very sensitive to dye medications if they fall ill.

I change 30% of their water once a week. They seem to like larger volume water changes than most tetras do. Keep the temperature a bit warm, 75° - 80°F. I find 78°F works best for me. Lemon tetras do not tolerate poor water quality.

Lemons are one of the easiest to feed




tetras. They love all foods, especially daphnia and any kind of worms.

Lemons are not hard to breed once you have a suitable well conditioned pair. Females, however, many times refuse to breed, even if full of eggs. They are very picky about which males they will spawn with. I suggest using 2 males with each female to negate the problem. If your female still refuses to breed, swap out the males.

Condition your breeders well for 1 week (separated), on frozen or freeze dried worms, daphnia and cyclops. For some reason, brine shrimp does not seem to be sufficient alone to condition Lemon tetras.

Fish conditioned mainly on brine shrimp produce a lot of infertile eggs. So vary their conditioning diet and put a heavy emphasis on worms. Do not separate and condition your breeders more than 1 week or the female is liable to become eggbound.

Use a 10-gallon tank with hornwort, Java moss and an airstone to breed a trio (1 female, 2 males). Fill the tank only half full. Use water from the tank the fish have been housed in. Keep the temperature at 78° - 80°F. Cover all sides except the front with black paper. Add the fish at night and add a bit (10%) of freshwater in the A.M. This will usually trigger them to spawn. The fish spawn side by side in typical tetra fashion in the plants. 150 to 300 eggs is not unusual. Upon free swimming, the babies take frozen or live baby brine shrimp, rotifers and crushed flake food.

They are easy to raise, but be careful about giving them too much light too soon. Remove their black "curtains" slowly and gradually. Bar none, lemon tetras are awesome! Get a school for your home. You'll be glad you did! 

Happy Fishkeeping.

John

John Todaro - BAS

SPECIES PROFILE

Scientific Name: *Hyphessobrycon pulchripinnos*.

Common Name: Lemon Tetra.

Distribution: Brazil.

pH Range: 5.0 - 7.5.

Temperature Range: 75° - 80°F.

Water Hardness: 18 - 215 ppm.

Size: 1½ inches.

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

Sexing: Adult males are less deep-bodied, slightly smaller, and more intensely-colored than females, particularly in the dorsal and anal fins.

Diet: Omnivorous feeding on small invertebrates, crustacea.

Breeding: 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).

Remarks: This species is a popular aquarium fish and is bred on a commercial basis in several countries, with a selectively bred albino form also available.

Reference: Seriouslyfish.com





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.

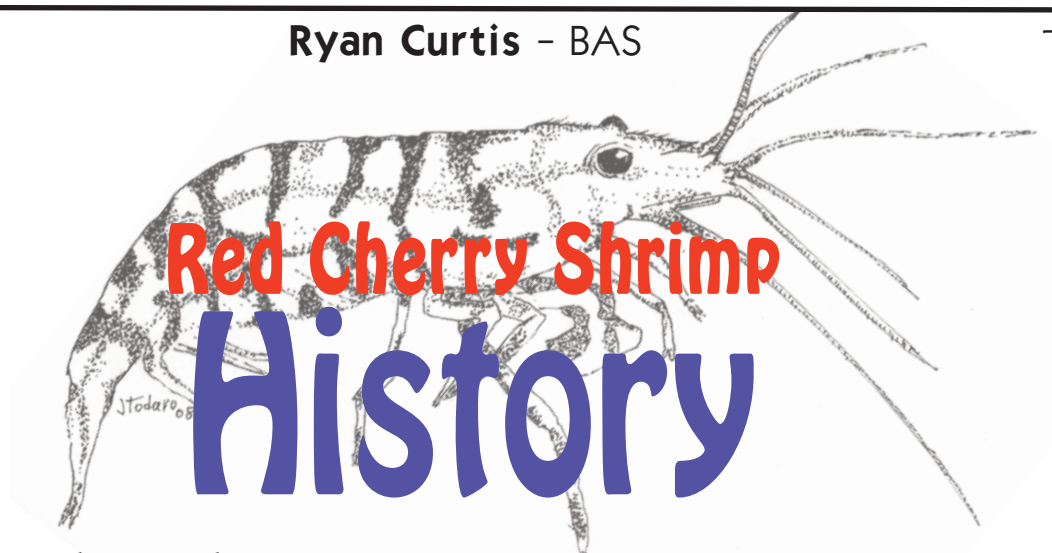
FIRE RED SHRIMP



Selectively bred Red Cherry Shrimp for "FIRE" red color! They are terrific algae eaters and will burst with awesome color against any planted or even non-planted tank.

Scientific Name: *Neocaridina davidi* var. red.
Other Scientific Names: *Neocaridina heteropoda*,
Neocaridina denticulata sinensis.
Common Name: Red Cherry Shrimp.
Other Common Names: Cherry Shrimp, Cherry
Red Shrimp, RCS.
Temperament: Peaceful.
Breeding Rate: High.
Skill Level: Beginner.
Minimum Tank Size: 1-Gallon.
Origin: Taiwan.

Found in Wild: No.
pH Range: 6.2 - 8.0.
Ideal pH: 7.2.
Temperature Range: 65° - 85°F.
Ideal Temperature: 75°F.
Ideal Hardness: 8 dkh.
Hardness Range: 3 - 15 dkh.
Life Span: 1 - 2 year.
Gestation Period: 30 days.
Size: Approx. 1/2".
Diet: Omnivore.



The Red Cherry Shrimp is the red color variation of the wild *Neocaridina heteropoda*. This color variation was originally bred in Germany and started to appear in The United States in the late 1990's.

Care

The Cherry Red Shrimp is an undemanding shrimp in its care requirements. They should be kept in a well established aquarium with no predators. The most important factor for water parameter is stability. And as long as none of the water parameters are in the extremes, Red Cherry Shrimp should be happy and healthy. Want to know how to get even redder red shrimps?

Diet

This aquarium freshwater shrimp is an Omnivore. They are decent algae eaters, and if sufficient algae is not present, foods intended for aquarium fish and invertebrates can be used to supplement their diet. Another great supplement is blanched (boiled until soft) vegetables.

Red Cherry Shrimp Breeding


If a male and a female are present in a well cared for aquarium, the Cherry Shrimp will breed. Females are larger and much more colorful;

males are smaller and display a clear coloration with red spots. When the female is mature, she will often times display a saddle. The saddle is the eggs developing in the female's ovaries.

Behavior

Cherry Shrimp are very non-aggressive. They spend most of the day grazing on plants, gravel and any other tank decorations for algae and other types of foods. Red Cherry Shrimp will get along very well with any other type of dwarf shrimp that is non-aggressive. When the Red Cherry Shrimp is kept in an aquarium that has no predators, they are very active and only hide after molting (shedding exoskeleton to enable growth).

Special Notes

As with all aquatic invertebrates, it is important to make sure copper does not get into the aquarium. Copper is toxic to all Dwarf Shrimp. Many medications contain elevated levels of copper, so it is recommended not to medicate an aquarium containing Dwarf Shrimp. 

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



Anthony P. Kroeger - BAS

IM MELTING, MELTING,
OH WHAT A WORLD, WHAT A WORLD...



**This famous line could refer
to a common Crypt problem.
MELTING.**

Melting occurs when the leaf structure of crypts suddenly and rapidly disintegrates. The plant essentially collapses into a pile of decaying, dead, white cellular goo.

Crypts are generally very hardy, durable plants, yet all are susceptible to melting.

What causes it and why?

How is it prevented?

What to do if it happens to you?

Let's look at this phenomena and try and answer these questions.

Not a lot of research has been done on crypt melt. But some patterns do emerge from what is known

Question #1

What causes melt and why?

Melt is a stress reaction due to a rapid environmental change that the plant cannot adapt to quickly enough.

Usually this is water quality related. Too much pH or hardness changes, too drastic of a temperature change or too poor water quality. However, I have seen cases of melt triggered by ponds flooding where emersed crypts are suddenly completely submersed. However, the latter less frequently induces melt than drastic water quality changes.

Melt usually occurs when (if) you buy a potted crypt plant at a store from a system with poor water quality and then put it in your tank. Most meltdowns occur in transition from the store to your tank. The plant looks fine when you plant it, but within a day the leaf edges disintegrate, Three days later, it's mush.

Melt is a stress reaction by crypts. It protects the root so they can take time to adjust and resprout.

Never dig up and throw away a melted crypt. It will resprout. ***Do not disturb it!***



Question #2

How do I prevent it?

Always acclimate crypts just like fish. Keep its light low and reduce weekly water changes until it adjusts and starts to grow. Keep its conditions as stable as possible. Sometimes a long established crypt will melt. Check your water quality immediately if this happens. It's almost always off in some way which triggers your crypt's meltdown.

off, change 10% daily until they return to normal. Do not change more than 10% a day. It will shock your crypt again and possibly kill it.

Do not disturb your crypt's roots or the substrate near and around the crypt.

Resprouting is usually slow (4 - 6 weeks for most species), But once restarted growth resumes at a normal (that is to say moderately slow) crypt pace.

Be sure to keep your lighting low during



Question #3

What to do if it happens to you?


Basically very little! Never disturb the crypt or uproot it. It will resprout and come back as strong and beautiful as ever.

Gently trim off the dead/decaying leaves above the substrate line. Usually you can easily siphon them off as they will generally separate easily from the roots at this time.

Check your water quality. If any levels are

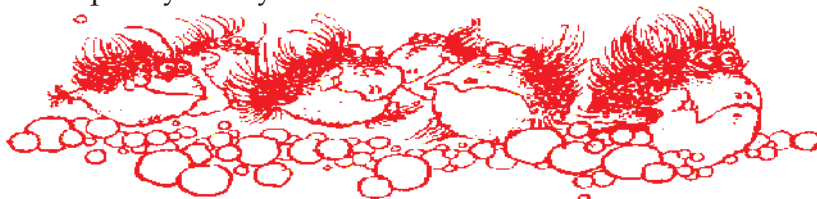
the resprouting process so algae does not overwhelm the new small crypt regrowing.

Also monitor all water parameters closely and often during this time to maintain high water quality and consistent water parameters.

Let the wicked witch melt! Crypts are too beautiful to allow that to happen. Maintain a high quality stable environment for your crypts and they'll beautify your tanks for years. 

Happy plantkeeping

Jon4





Dick VanHyfte - EIAA
Finflap, October 2015

Spawning The Banded Pygmy Sunfish *Elassoma zonatum*

In April, I received 5 *Elassoma zonatum* from my son Lee following his collecting trip with Ken Glackin, in Missouri. It turned out that I had 2 males and 3 females. This time of year, sexing by color is a good option since this is the start of the natural spawning season. Males become very dark during spawning, while the females retain their gray color. I placed all fish in a bare bottom 10-gallon aquarium with about 3" of water, some java moss and guppy grass. The temperature was 71°F, and the conductivity was 227 PPM, slightly above the water they were in when received.

The fish ate immediately on a diet of Grindal worms and baby brine shrimp. The males quickly became more colorful and began guarding territories. All seemed to be going well, but a few days later a couple of fish died off without warning. The bodies appeared to fungus quickly and I noticed some hydra in the aquarium. I added some Amquel to assist water conditions. The next day another fish was dead. It was then that I noticed a male, quite colorful, aggressively guarding an area nearly out of sight. I only had one male and one female remaining, and wondered if she was the sole survivor, and he had killed the others. I soon found out that they had spawned since several fry were darting about, but not yet free-swimming. I removed the pair and placed them in a separate 5-gallon. Soon thereafter, he killed the female.


A couple of days after the observation of the fry presence, they became free-swimming. At this time I added a couple of soaked oak leaves and fed them BBS and microworms. This caused



the hydra to start proliferating. I dropped a few pre-1982 pennies into the aquarium to try to counter the hydra. I also siphoned all the fry I could locate into a separate 5-gallon aquarium to which I added a healthy green water culture. This did leave several fry behind. Within a couple of weeks, the fry in the green water had died and only the fry left in the original 10 survived.

Presently (September), only about 15 fry remain. The hydra had taken nearly a month to die from the copper in the pennies but the fry seemed to avoid them while growing. I did not see any evidence of fry killed by the hydra. I suspect that their habitat must also contain hydra and they have adapted, somehow, to co-exist with this pest.

I never did try to feed the adults nor fry with frozen or dried food. Reading available references, it sounds as though this species will not take non-moving foods. With water flow, some frozen foods might be accepted if you can keep it moving. Since I did not have any strong aeration in this aquarium, I elected not to attempt this. I also believe that the leaves provided some slime that helped maintain the fry. This may account for differences in fry survivability in the 10 versus the 5.

I do not feel that this breeding was a major accomplishment since I did not really carry these fish through pre-spawning conditioning to any major degree. I do not know, for example, if keeping these fish cool in the winter is necessary for spawning in the spring. I may try spawning them again after carrying them through the winter. 



DISASTER IN YOUR REEF AQUARIUM!

CORAL DISEASES MY EXPERIMENTAL TREATMENTS

Now we come to part #3 of my experimental treatments for coral diseases.

I must add the disclaimer that none of these treatments are scientifically proved thru testing as of yet; however, I have had good success with some of them.

As an importer, I assume any sick coral is probably a loss, so I have some latitude to experiment were a home hobbyist may not have.

Some of my treatment experiments were successful; some inconsistently so and some were not. I present my efforts and results so as to encourage further experimentation on sick corals, something I certainly plan to do.

I've developed my treatment protocols based on the following:

- #1. All nature must be in balance.**
- #2. There is no disease for which there is not a natural cure.**
- #3. In order to survive so many eons, corals must be a resilient animal.**

That being said, let's look at my experiments!

Most drugs we have come from plants, so being an avid gardener I looked in my garden to see if I could come up with any possible treatments. What natural plants do I have that I could use?

**I EXPERIMENTED
WITH THE FOLLOWING PLANTS
THAT PEOPLE USE:**

- **GARLIC** - *Allium sativum*.
Used to boost the immune system.
- **YARROW** - *Achillea millefolium*.
A natural anti-inflammatory.
- **MARSHMALLOW** - *Althaea officinalis*.
Used to soothe lung, stomach & intestine linings.
- **CHINESE MILK VETCH** - *Astragalus membranaceus*.
Boosts immune system.
- **POORMAN'S GINSENG** - *Codonopsis pilosula*.
Boots immune system.
- **PURPLE CONEFLOWER** - *Echinacea purpurea*.
Boots immune system.
- **BONESET** - *Eupatorium perfoliatum*.
Anti-inflammatory, reduces fever.
- **HUSSOP** - *Hyssopus officinalis*.
Increases mucus production.
- **SWEET CICELY** - *Myrrhis odorata*.
Antiseptic and improves digestion.
- **BALKAL SKULLCAP** - *Scutellaria balcalensis*.
Fights gastrointestinal infections.
- **COMFREY** - *Symphytum officinale*.
Contains allantoin, promotes healing of skin and greatly increases mucus production.
- **MARIGOLD** - *Tagetes* Sp. Kills nematodes.
- **WITCH HAZEL** - *Hamamelis virginiana*.
An astringent.
- **WHITE PINE** (cones) *Pinus strobus*.
Anti-bacterial & possible anti-viral.
- **ELDERBERRY** - *Sambucus canadensis*.
Anti-viral and immune system booster.
- **LINDEN** - *Tilia americana*.
Eases gastro-intestinal problems.
- **CRANBERRIES** - *Vaccinium macrocarpon*.
Gastro-intestinal problems & alkalizer.
- **BLUEBERRY** - *Vaccinium angustifolium*.
Antioxidant.
- **RASPBERRY** - *Rubus* Sp.
Antioxidant.
- **CALENDULA** - *Calendula officinalis*.
Antiseptic.
- **JOE-PYE WEED** - *Eutrochium purpureum*.
Anti-bacterial & anti-inflammatory.
- **FIDDLENECK** - *Phacelia tanacetifolia*.
Plant growth suppressor.
- **WELD** - *Reseda luteola*.
Natural water fast deep yellow dye.
- **ALOE VERA** - *Aloe barbadensis miller*.
Natural skin healant & burn remedy.

DON'T LAUGH AT THE LIST

Some of the results were very surprising!

Admittedly, most reef aquarists will not have access to such plants; however, you can find most, if not all, of these items in your local health food store. Simply use that form instead of the unprocessed plants as I did.

One other point before we proceed. I wanted to be sure the treatment stayed on the infected sites. What to use to hold it on the site?

I used three different "glues." All three worked fairly well. The three I used were Knox gelatin, honey (a natural anti-bacterial and anti-inflammatory as well) and honeycomb wax, which has the same characteristics as honey.

For each of the above, I used the "juice" of the plant or berry with the exception of the pine cones. Those I boiled in low level water. I also

tried pine tree sap melted in a little boiling water.

I tried multiple combinations of the above "juice" in equal parts which I then mixed with each of the "glues" and painted it onto the coral with a soft artist's brush.

Prior to receiving any treatment, all infected hard corals were given a one minute fresh water dip. **Note:** Do not fresh water dip small polyps or *Xenia* Sp. corals. **It will kill them.**

All diseased specimens were placed in total isolation/quarantine prior to, during + 30 days after treatments. I encourage the home aquarist to experiment with these. Here are the results of some of my experiments. I'm listing some of my most promising results and some failures too. I intend to experiment much more intensely on some.

The results are listed by diseases:

#1. BLACK BAND DISEASE - BBD

My most promising treatment for this disease is a combined honey with coneflower, hyssop, comfrey, marigold, cranberry juice, joe-pye weed and elderberry juice. This combination was painted on with honey as the binder. It stopped BBD 3 out of 4 times. The band simply seemed to disintegrate under the honey. The hyssop and comfrey definitely made most corals produce more mucus. I believe the elderberry juice and joe pye weed were the causative agents for the BBD demise; when one was left out the BBD was only slowed. When both were removed, the BBD remained static a few days then resumed eating the coral. I believe the other ingredients helped boost the coral's immune response.

This combination must be researched much more as it did not work if used with the Knox gelatin instead of honey. Some property in the honey must either weaken the BBD or facilitate the transfer of the "Jello" cocktail's active ingredients to the BBD. This did work with the honeycomb too, but the honeycomb wax smothered any corals under which it was applied, which the honey did not.

My worst failures were when I tried the anti-bacterial plants without the mucus enhancers. This resulted in 100% coral loss. I believe the mucus enhancers build a sort of natural "first break" between the living coral and the infection site, thus making it harder for any new polyps to be infected.

#2. WHITE PLAGUE DISEASE - WPD

My best results for this were obtained using comfrey (mucus), Hyssop (mucus), skullcap, pine cones, cranberry juice, joe-pye weed and aloe vera with honey.

This mix stopped tissue loss about 2/3rd's of the time. This also worked fine with Knox gelatin as a fastener. The biggest problem was the loss of tissue seemed to grow out from under the treatment area. If that happened, the treatment was totally ineffective. So it seems

this treatment has one shot to stop White Plague. I broadened the treatment "zone" on some infected *Montastraea* and that seemed to stop it. So make sure your treatment coverage area is broad enough. My other mixture of "jello" cocktails were ineffective.

#3. White band Disease - WBD

This disease is tough! I basically threw everything but the kitchen sink into the mixture and at it. My results were not totally ineffective. Some results were inconsistent. As I have never read of the causative agent, I focused my treatment on boosting immunity and stopping the sloughing of tissue. I assume there is a causative agent, but not knowing what it is I figured if I can preserve tissue the coral can fight it off.

I found regardless of the treatment the thicker the branches of the *Acropora*, the harder it was to treat. Perhaps due to ineffective coverage? My losses of thick branches were about 50/50.

Knox was not effective as a binding agent. Wax was, but did not provide complete coverage. The covered areas stopped disintegrating, but not other areas. Honey seemed the only workable binding mixture for the following ingredients: Hyssop, Comfrey, Marshmallow, Poor Man's Ginseng, Chinese Milk Vetch, Boneset, Linden, Cranberry juice and Aloe Vera.

These experiments require much more work before I'm anywhere near satisfied with the results. All other treatments were ineffective.

#4. WHITE POX - WP

I feel this disease is very closely related to White Band disease. I tried the same treatments as listed above and got, basically, the same results.

#5. RED BAND DISEASE - RBD

Seeing as this seems to be related to Black Band disease, I started with the same basic treatment. To this treatment I added garlic, blueberry / raspberry juice and fiddleneck. The *Gorgonians* responded 80% of the time.

Oddly enough, when I added the same



ingredients back to my Black Band disease cure, it made little if any difference in my survival rate; however, those that did survive recovered much faster and much stronger. The plant growth inhibiting qualities of the fiddlehead definitely effected both the vitality of growth and speed of growth of the *Cyanobacteria*.

#6. BROWN JELLY DISEASE - BJD

For this disease, I removed as much Brown Jelly as I could before treatment. Then a freshwater dip of one minute. For this ailment, my most reliable mix was a "jelly" cocktail of hyssop, comfrey (both for mucus creation) white pine, elderberry, linden, joe-pye weed, yarrow and skullcap.

Three additives I experimented with each set of experiments were:

- Witch hazel - an astringent.
- Calendula - an antiseptic.
- Weld - a deep yellow dye.

I used calendula extract after 50% of the freshwater dips. My survival rate improved by about 1/3rd. I specifically used witch hazel extract on any and all corals sloughing off tissue. I put it on as a sort of "band-aid" over the honey. I used a thin layer of honey or Knox for this. The results were

amazing! My losses were 10% less when I added this "band-aid," but when I added calendula and yarrow extract to the band-aid, my survival rate went up another 10%!

I firmly believe my "coral band-aid" is a workable and viable idea, perhaps one that will work in marine and maybe even freshwater fish as well.

Finally the weld. This plant produces a very dark water fast yellow dye. I mixed this in with the honey for BBD & RBI treatment.

There is absolutely no doubt in my mind that this dark dye impeded the cyanobacteria's abilities, possibly by changing essential photosynthesis processed. It did not appear to

effect the *Zooxanthellae*. When mixed in with my "band-aid," it stopped BBD and RBD in its tracks.

This "Band-aid" mixture also dramatically slowed the progression of White Plague.

It effected White Band disease on some species of *Acropora*, but not all. I'm unsure as to why.

I do feel my experiments do hold potential, especially regarding BBD and RBD and perhaps White Band. I do feel I am on the right track. Further experimentation should improve the survival rates, especially with an appropriately formulated aquatic "bandage."

An idea that I also intend to try on rapid tissue necrosis (RTN).

I feel my ideas for Brown Jelly treatment holds potential too! I am unsure if my ideas will work for White Band and White Pox.

Losses are still very high. Not much survival over simple chance survival.

However, I have seen a decrease in the progression of the disease. Something I'm doing is impeding it, but I do not know exactly what or how to enhance its effects just yet.

I feel a place to start is to adjust the dosage in my formulation. Perhaps some larger doses of certain

ingredients would work better or additional treatments over time, once the rate of disease progression has slowed (ala chemotherapy for cancer)?

There are many experiments I must do and many questions to be answered. But I do feel I'm on the right track. I certainly will continue to work on these ideas.

I hope they give you a place to start from too, if a disaster ever strikes your reef tank,

Happy Reefkeeping.



Jonny

Admittedly, most reef aquarists will not have access to such plants; however, you can find most, if not all, of these items in your local health food store. Simply use that form instead of the unprocessed plants as I did.



Brine Shrimp Fact Sheet

Here are some interesting data on this fascinating life form.

1. Under optimal conditions, brine shrimp grows from larvae to adult in less than two weeks, increasing in length by a factor of 20 and in biomass by a factor of 500.
2. *Artemia* can be found in a wide range of water salinity; i.e, from 10 ppt to saturation level. Above 100 ppt, no predators or food competitors survive, resulting in a monoculture under natural conditions.
3. There are literally hundreds of locations on the five continents where brine shrimp live, and many natural strains of *Artemia* thrive in coastal salinas as well as in inland salt lakes (rich in chlorine, sulphate, or carbonate salts).
4. *Artemia* can reproduce by two ways, viviparous or live reproduction (free swimming nauplii) occurring in lower salinity levels. Oviparous reproduction occurs at salinity exceeding 150 ppt (the ocean is around 35 ppt). The *Artemia* will switch reproductive modes to maximize their survival according to the conditions. During oviparous reproduction, the embryo develops into gastrulae at which stage they are encapsulated in a cyst shell and their metabolism is reversibly interrupted. As the salinity drops (in the rainy season), the dehydrated cysts will hydrate and the hatching mechanism will be triggered. Within 24-48 hours, a live *Artemia* nauplii will emerge.
5. *Artemia* has a high fecundity rate (more than 100 cysts or nauplii, every four days) and a long lifespan (exceeding 6 months).
6. Proper knowledge of the biological and ecological (life cycle and habitat) characteristics of brine shrimp reveals the potential to understand and manage existing natural resources of cysts and biomass in operational saltworks or salt lakes. The natural distribution or "dispersion" of *Artemia* can be enhanced by human intervention, i.e., introduction or "transplantation" of a selected *Artemia* strain into a suitable environment.
7. The quality of the *Artemia* produced differs from strain to strain and from location to location as a result of genotypical respectively phenotypical

variations. The *Artemia* largely reflect the food conditions of the high levels of heavy metals and/or chlorinated hydrocarbons and/or deficiency in essential fatty acids for marine predators.


8. *Artemia* are non-selective filter feeders and feed on particulate matter of biological origin as well as on living organisms of the appropriate size range (microscopic algae and bacteria). In fact, due to the absence of predators and food competitors in hypersaline conditions, *Artemia* often develop into large monocultures, the densities of which are mostly controlled by food limitation.

Is there a way to store live baby brine shrimp?

Absolutely! Read on.... **Reason for Storing Live Brine Shrimp.** Storage, or holding live brine shrimp at cold temperatures, is a way of preserving the nutritional quality while maintaining a live food.

Preparing Baby Brine Shrimp for Cold Storage.

Harvest the baby brine shrimp (BBS) into a fine mesh net and rinse with fresh water. Put one quart's worth of BBS into a shallow dish (petri dish) with about 1/4 of salt water. Place the dish in the refrigerator. The BBS should remain alive for 2- 3 days for later feedings. **Advantages of Storing Baby Brine Shrimp.** Cold storage of live BBS saves time and eliminates the need to maintain daily hatches of brine shrimp cysts. When newly hatched brine shrimp are stored at 39°F, their metabolism is slowed down considerably, conserving essential nutrients, lipids, and fatty acids that many fish and invertebrate larvae require. A lower metabolism will also slow down growth and maintain a smaller feed particle size for smaller larvae and fry. Later feedings of stored BBS is easy. Simply pour the BBS into a fine mesh net, rinse with fresh water, and feed. **Storing Live Adult Brine Shrimp in the Refrigerator.**

Can you store live adult brine shrimp? Yes! In fact, many pet stores hold live brine shrimp in the refrigerator. They put about one quart of live adult brine shrimp in one gallon of clean salt water. To maximize surface area, a flat shallow container, like a kitty litter tray, is used. Aeration helps but is not absolutely necessary. 



Anthony P. Kroeger - BAS

FLY WITH ME! MEET THE HATCHETS



A flying fish! Yes, hatchet fish are truly that! Hatchet fish are the only fish that actively move their pectoral fins in flight, just like birds, to control direction and speed. All other flying fish simply glide.

Native to South America, several species are offered to hobbyists. In size, they range from about 1" inch to 3 1/2".

Care for all species is similar. Needless to say a tight fitting cover is mandatory for all hatchet fish. Always cover their tank. If you don't you'll find them dried out on your floor.

A 10-gallon tank is fine for smaller species. Use a 20-gallon for larger hatchets. Hatchets

prefer soft, acidic (6.8 pH) water but can tolerate most normal water conditions. They like a temperature between 74° to 80°F. Do not chill hatchets.

Below 74°F they easily catch ick which can be very difficult to cure. Sand, a sponge or box filter and lots of plants is all they need. I use water sprite, just let it float; hornwort is also good too.

Hatchet fish like to shelter under floating leaves of water sprite.

Not really a schooling fish, hatchets are very peaceful community tank fish which like the company of other hatchets, so always keep 3 to 6 together. They'll form a loose shoal.

Hatchet fish are surface fish only! Any hatchet not on the surface is sick. Never buy a hatchet that is not swimming at the surface.

Feed hatchets flake foods fruit flies, frozen mosquito larvae, etc. Hatchets are not boisterous

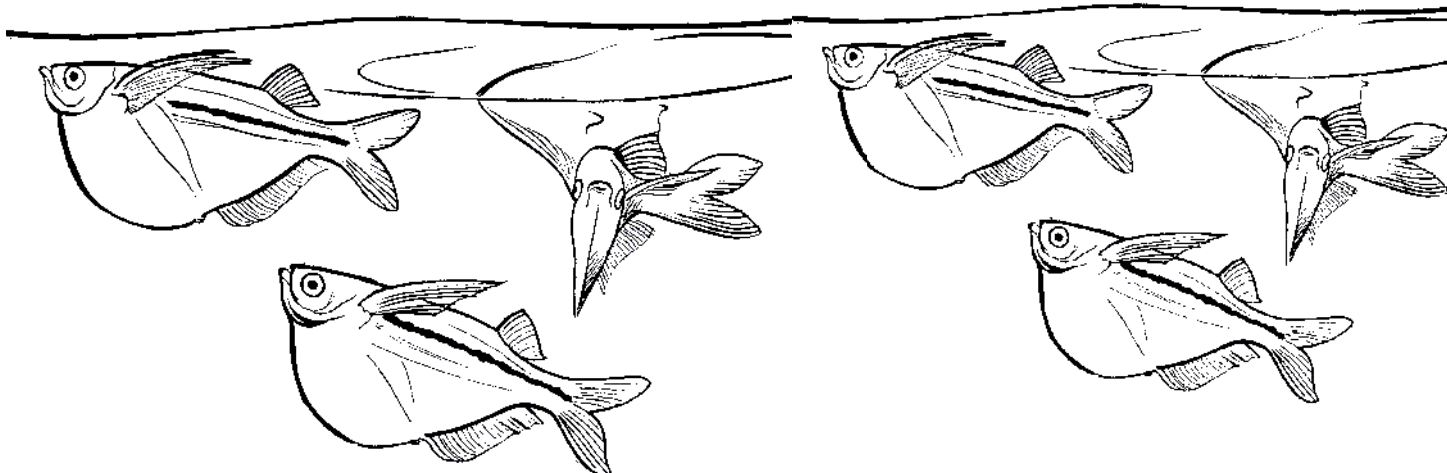
feeders, be sure they get their share of food and enough to eat.

Change 20% of their water weekly to keep them happy. Hatchets offered for sale are usually wild caught. Most species are seasonally available at medium prices in most pet stores and online.

Commercial breeding protocols are just now being developed. Hobbyist spawnings are rare. I encourage every breeder to try their luck. Home breeding hatchets would certainly bring some BAP points and society bragging rights to the breeder.

The following species are offered to hobbyists. I have listed them in order of availability to hobbyists.

The most commonly available is listed first. Care for all hatchet species is similar. Following is basic information on each species.



1] Silver hatchetfish

Gasteropelelus stenica.



Native to Brazil, up to 2 ½" huge silver belly and pectoral fins. Olive green nape, 2 green, 1 black horizontal stripe on the body. Temperature 74° to 80°F. Fairly hardy. Moderately priced. Sensitive to chilling/ick.

2] Marble hatchetfish

Carnegiella strigata.



Native to Peru up to 1 ½" inches. Honey / brown nape, white and dark chocolate marbled belly. Temperature 76°F to 80°F. Moderately priced. Extremely sensitive to chilling/ick. Hobbyist spawning reported. With out a doubt the prettiest and most popular hatchet fish. Beautiful hatchet.

3] Blackwing hatchetfish

Carnegiella marthae.



Native to Venezuela. Up to 1 ½" inches. Honey / gold nape. Semi-transparent belly with black polka dots and outlined in black. One horizontal black body stripe with gold stripe above it. Huge black pectoral fins. All other fins clear. Temperature 76° to 80°F. Medium priced, only seasonally available but common in season. Very sensitive to poor water quality, chilling and ick/ Ick is usually fatal to this fish, Not recommended for beginning hobbyists.





4. Spotted hatchetfish

Gasteropelicus maculatus



Native to Venezuela and Colombia. One of the largest hatchetfish. Grows to 3 1/2" inches. Huge silver belly, olive nape. Random black polka dots. Best jumper of all hatchets. Keep tank tightly covered, it's amazing how small a crack they can soar thru. Fairly hardy, and less sensitive to ick than other hatchetfish species. Only seasonally available.

All specimens offered are wild caught. Has not been spawned in the aquarium. Less sensitive to chilling. Always keep them at temperatures between 74° and 80°F.

5. Giant silver hatchetfish

Thoracocharax securis



Native to the West basin of the Amazon - wide distribution. grows up to 3 1/2" inches. Solid metallic huge silver belly, olive green nape, huge pectoral fins. Sometimes sold as the "King hatchetfish" due to its size. Needs more space and high oxygen levels. This hatchet is only briefly available in season. Look online and in better aquarium stores to find it. Expect to pay a medium high price for it. Seldom offered by exporters, this fish is very difficult to collect. It easily can jump 4 to 6 feet to clear a collection net. Imagine what it can do in an uncovered aquarium. Less sensitive to chilling/ick than most species.

6. Blackline pygmy hatchetfish

Carnegiella myersi

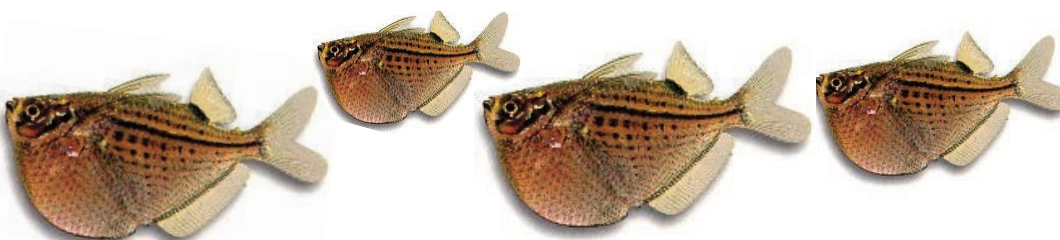


Native to Peru and Bolivia. Grows to 1" inch. The smallest, rarest and most sensitive hatchet, also sold as the "Glass hatchet" in the trade. Light green nape, broad black stripe over lateral line. Transparent belly with black polka dots. This hatchet is outlined in black, rarely exported, highly seasonal. Medium high priced. Very sensitive to chilling, water quality and ick. Ick will usually kill this fish. Good for nano tanks only if you can meet its needs. Expect to look hard to find this hatchetfish.

IF DISASTER STRIKES AND YOUR HATCHETS CATCH ICK I RECOMMEND THE FOLLOWING:

- 1] Raise water temperature to 86°F. Hatchets take heat fairly well.
- 2] Add heavy aeration via airstones.
- 3] Use only copper (chelated) or Methylene blue to treat hatchets, Use 1/2 manufacturer's recommended dose.
- 4] In extreme cases use 1/2 dose Acriflavine.
- 5] Never use Malachite green.

All hatchets are fun, interesting and unique;try some! 



70n4



Chase Klinesteker - NJAS
REPORTER APRIL 2012

BREEDING THE CELESTIAL PEARL DANIO

Celestichthys margaritatus



The Celestial Pearl Danio, *Celestichthys margaritatus*, is one of the prettiest small fish I have ever seen. It was first discovered in 2006 in a small region of Myanmar, South East Asia, east of Lake Inle. It became an immediate hit in the hobby, and some were concerned about depleting the native population by overcollecting.

It was first given the common name of Galaxy, or Fireworks Rasbora until it was found to be a Danio. Its small size (adults $\frac{3}{4}$ inch) and attractive colors and patterns make them ideal for a nano tank. Males are more colorful and have

a brilliant red-orange pattern in the dorsal, anal, and caudal fins, as well as red and yellow in the belly area. The body is a dark steel blue with an irregular sprinkling of pearly white dots, reminding one of stars in the Heavens. Females have less color in the fins, not as dark a blue background, and a white or yellow belly area. In well cared for fish, the females will always be plump. It is a very peaceful fish, to the point of being shy, so it does best in a species tank. Active and peaceful surface dwelling fish would make good tankmates, as the Celestial Pearl Danio inhabits the mid and lower tank levels mostly. It comes from shallow area lakes with heavy plant growth, so plants and hiding places are important to have available. They seem to be more active in low light conditions. Its reported preference for water conditions ranges from acid to alkaline, indicating that it is fairly adaptable, but quick changes of water parameters are not recommended. Clean un-polluted water is the most important factor,



and they will not do well in unsanitary aquariums, being somewhat susceptible to velvet. It comes from higher elevations and prefers temperatures from 65°-75°F degrees. It eats a variety of foods, but has a small mouth and is reluctant to come to the surface to feed. Live baby brine shrimp, daphnia, and blackworms seem to be some of their favorite foods.

BREEDING

Not a lot of detail is available on breeding this fish, although many articles claim that, because it is a danio, it is easy to breed. I hope to add my experience breeding and raising this fish and maybe help others to lessen the collecting pressure on the native stock.


It probably will never become commonplace in fish shops because it is small in size, not prolific, and grows slowly, not good attributes for commercial breeders. Because their native habitat was near Lake

Inle (high elevation and hard alkaline water), I chose to place the 2 ½-gallon breeding tank outside the fishroom where temperatures range between 65°F degrees in winter to 75°F degrees in summer. To harden the water, a small box filter with dolomite gravel as the filter medium was used on one end of the tank. On the other end, a cut matt of artificial grass was placed down with other plastic plants on top to give many places to lay the eggs and hide them from predation

(they are avid egg-eaters!). These fish will spawn regularly with live foods and water changes, but the eggs are large for this small a fish and a group of 4 pairs may only lay 20-40 eggs at a time. The non-adhesive clear eggs are siphoned up after shaking them out of the plastic plants and placed in a gallon container with fresh water, methylene blue, and a bubbler for oxygen. In 4 days they will hatch, and they look like tiny glass slivers attached to the side of the container. They need 4 more days to become free swimming. They swim in short jerks, are long and skinny, and are not heavy eaters.

This is when I have had the most difficulty raising them, because they require infusoria for several days before they will take baby brine shrimp, and overfeeding will kill them. Much attention needs to be paid to keeping the water clean as the fry are very susceptible to water pollution. Once

they begin taking brine shrimp, raising them becomes easier, although they grow quite slowly. 4-6 months is needed for them to reach maturity, and they still may be only ½ inch long at that.

Often they come to the shops so small that they are hard to appreciate, but in a couple more months will blossom into the true beauties they really are! 



Male



Female





Paul V. Loiselle - NJAS
REPORTER APRIL 2012

Puntius tiantian A New Dwarf Barb from Burma

For much of the last half of the twentieth century, armed conflict and the vagaries of local politics have prevented the exploration of the fresh waters of Burma by ichthyologists and ornamental fish exporters alike.

This state of affairs changed for the better in the 1990's, which saw both intensive surveys of this very poorly known region by European ichthyologists and the reappearance of Burmese fishes in the tropical fish trade. As the fish fauna of Southeast Asia is overwhelmingly dominated by carp-like fishes, it is hardly surprising that most of these Burmese novelties have been representatives of the Family *Cyprinidae*. Danio species and their

allies have figured prominently among the Burmese fishes that have recently caught the attention of aquarium hobbyists, but Burma is also home to a number of small barbs that are equally worth their attention.

The recently described *Puntius padamya*, which made its aquaristic debut in the 1970's under the trade name Odessa barb, is the most generally available of these small barbs. However, over the last five years, **Dr. Sven Kullander** and his wife **Dr. Fang Fang** of the Royal Swedish Museum have described seven diminutive barb species from northern Burma. One of these, *Puntius erythromycter* Kullander 2008, exported under the trade name of lipstick barb, has enjoyed a

modest success as an aquarium fish. In this article, I wish to introduce another Burmese newcomer that merits a place among the ranks of aquarium fish, *Puntius tiantian* Kullander and Fang 2005, the Burmese bumblebee barb.

This small barb comes by its common name honestly. The dominant features of its color pattern are an ovoid black bar in the shoulder region and a black spot at the origin of the caudal peduncle [Figures 1 and 2.]. Its color pattern, together with the absence of barbels, an incomplete lateral line and a

MALE



Figure 1. The dark markings in his dorsal fin are more pronounced and the yellow zone surrounding the two dark lateral spots are both more extensive and intense in this male *Puntius tiantian*.




Figure 2. The slightly larger size and overall fuller body shape of this female bumble barb are reliable indicators of her sex.

weakly serrated last unbranched dorsal fin ray place *P. tiantian* in the *Puntius conchoni* species complex. Native to the fresh waters of India and Burma, this assemblage of species includes old friends such as the rosy barb, the nominal species of the group, and *Puntius ticto*, as well as the Odessa barb, *P. padamya*. With a maximum length of 47.0 mm SL – well under 2" – the bumblebee barb is one of the smallest species of the *P. conchoni* complex.

Puntius tiantian is also the most placid representative of the group I have to date encountered. Male rosy and tic-tac-toe barbs can behave aggressively towards one another and have been known to harass heterospecific tankmates. Even the smaller Odessa barb can sometimes be a bit on the boisterous side. In my experience, bumblebee barbs are model aquarium citizens, behaving aggressively neither towards conspecific nor heterospecific tankmates. That said, this species has no difficulty holding its own in a community tank housing an assortment of danios, rasboras and barbs as well as Madagascar rainbowfish and dwarf cichlids. Furthermore both *P. conchoni* and *P. ticto* will also nibble on soft-leafed plants. I cannot comment credibly on the behavior of *P. tiantian* towards most aquatic plants, as mine are housed in a tank planted with Java fern and Java moss, plants most fish find unpalatable. However, a fellow aquarist, **Frank Greco**, who has kept the bumblebee barbs in a more conventionally aquascaped tank, reports that this species poses no risk to soft-leafed aquatic plants.

Like all barbs, *P. tiantian* is a highly social species that should be kept in groups of at least four and preferable six individuals. While not at all shy about taking food from the surface, like most of its congeners, it typically swims in the lower third of the water column. It is comfortable over a pH range of 6.0 – 7.5 and with hardness values up to 10° DH and does best when its tank

temperature is held between 72° F. and 78° F. I can find no published report of a successful aquarium spawning of this species. Other representatives of the *P. conchoni* complex breed quite readily in captivity and I would be very surprised were *P. tiantian* to prove an exception to this pattern. The extensive field work undertaken by Drs Kullander and Fang in Burma necessitated long separations from their sons Didi and Tian Tian. *Puntius tiantian* and the closely related *P. didi* were named in their honor. To the best of my knowledge, *P. didi* has not to date been imported into the United States. It clearly has made its aquaristic debut in Europe, as the image purporting to be *P. tiantian* in the entry devoted to this species on the web site SeriouslyFish.com actually depicts *P. didi*. While both species are attractive, its clear orange fins give *P. didi* a slight edge in the color department. With the increasing commercial availability of Burmese fishes, it is not unreasonable to hope that *P. didi* will soon join *P. tiantian* among the ranks of ornamental fishes. 

Literature Cited

- Kullander, S. O. and F. Fang. 2005. Two new species of *Puntius* (Teleostei: Cyprinidae) from northern Myanmar. *Copeia* (2): 290 – 302.
- Kullander, S. O. 2008. Five new species of *Puntius* from Myanmar (Teleostei: Cyprinidae). *Ichthyological Exploration of Freshwaters* 19 (1): 59 – 84.



The Exchanges

• **Bucks County, PA. *The Buckette*** [January]
Interesting article for their Breeder Award Program (BAP) from December 2011 by **Roberto Pratt** on the breeding of *Enantiopus melanogenys*, which is a Lake Tanganyikan sand dwelling cichlid. This particular species builds a pit to attract females to spawn.

• **EIAA [Eastern Iowa] *Fin Flap*** [January]
The article Spawning *Elassoma evergladei* (Everglades pygmy Sunfish) is a great article about raising this local, native fish. I did pick up another nugget of fact from this article and that is how to rid your aquarium of the dreaded Hydra, without hurting your fish – add a dosage of *Fenbendazole*.

• **Greater Akron A. S. *Tank Topics*** [January / February]
Editor **Dave Williamson** challenged his readers to write about their first aquarium. The responses were not overwhelming, but it did spur some members to have flashbacks and relate to them.

Dave wrote his own experience and titled it “*The Start of Something Big.*” **Don Youngkin** entitled his story “*My First Aquarium*” and **Misty White** wrote “*Our First Tank.*” These are great, interesting articles that anyone can write about and would be a great beginner article for people who are unsure of what to write about.

• **Greater City *Modern Aquarium*** [December]
Wonderful nostalgia article titled *The Aquarium Stock Company Returns to Life! (Or At Least Its Sign Does!)* by **Joseph Ferdenzi**. The neon lighted sign of this famous early 1900’s (to the 1960’s) aquarium fish store in Lower Manhattan, between Warren and Murray Streets, was found on eBay. The sign was rusted and broken. Many of us old timers remember this sign in its heyday shining brightly to lead young fish aficionados to the treasures swimming majestically in their antique styled aquariums. The sign was found, obtained and restored to its original state by Zoo Med Laboratories



founder **Gary Bagnall**. It is a terrific story of a determined hobbyist's dream to bring back a famous relic of times long gone.

- **Greater Pittsburgh A.S.I. [Pittsburg]**

FINformation [January]

An article by **Steve Siska** on Gudgeon breeding with pictures. It is only a two paragraph article, but it's crammed with good information and descriptive details. Excellent!

- **Kitchner-Waterloo A.S. [Ontario, Canada] *Fins & Tales*** [January]

The Leopard Danio (*Brachydenio frankie*) by **Al Ridley**. Great article on this beautiful, fast moving, egg scattering species. Covers everything you need to know about raising, breeding, feeding and required environment for this exciting species.

Another article by **Stuart Morley** titled "10 Gallons of Jungle" is about how a 10-gallon quarantine tank became home for guppies, cory's and killies and from a few extra plants to a beautiful planted jungle.

- **Aquarium Club of Lancaster Valley, PA. *Tank Tales*** [January]

A reprint of **Wayne S. Leibel's** article "Why Hobbyists Should Write for their Club Journal" that first appeared in "The Shoreline," Jersey Shore A. S. March, 2002. I believe all clubs need their members to write and submit articles to their editor.

An excellent article by **Michael Buchma** about "TRUE *Rotala indica*," with pictures. This stem plant had previously been misidentified as *Rotala rotundifolia*. The author provides a description on how to differentiate between these two varieties

and also provides the optimum environment needed for successful propagation.

Also a very informative article by **Gary Haas** on the C.A.R.E.S. Preservation program of endangered fish species and how to look for the detailed information on Facebook (under C.A.R.E.S.). His article included a full color layout of the C.A.R.E.S. species and which member raised what species.

- **Missouri A.S. *Darter*** [January / February]

A reprint of a BAS *Aquatica* article that first appeared in "The Shoreline," Jersey Shore A. S. March, 2002 by **Wayne S. Leibel** titled "Why Hobbyists Should Write for their Club Journal." This is proof that all clubs need their members to start writing articles on their aquatic successes and their failures. Editors have a drought in their members' articles responses – they need your words and experiences or they will cease to exist!

A second article titled, "My Fish House: Balloon Guppies" by **Kathy Deutsch**, provides very interesting commentary on purchasing fish from a local store. The story delves into how to set up an aquarium to raise and breed them.

- **Raleigh, N.C. A. S.** (January)

This month's topic species is catfish; all you could ever want to know about catfish. The publication contains descriptive details about fishing for catfish such as channel, bullhead and flathead catfish. There is information about catfish recipes, anatomy, poster on *Corydoras* species, lifespan of different catfish and their environments.

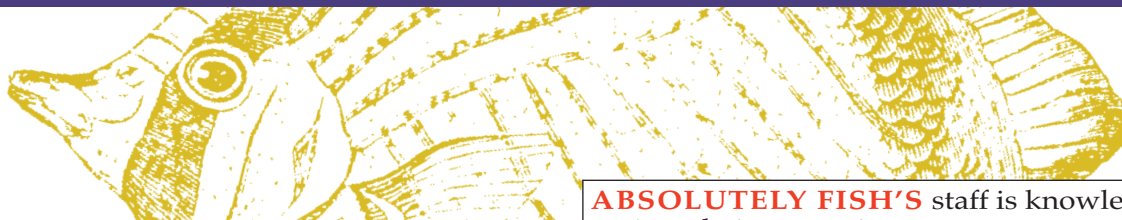
Anyone who wants to receive a copy of any of the above articles please let me (Exchange Editor) know by calling the club Hot Line, leave an email or come to a meeting.

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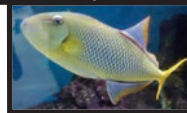
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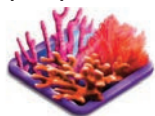
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