



AQUATICA

THE JOURNAL OF THE BROOKLYN AQUARIUM SOCIETY
VOL. XXIII MARCH ~ APRIL 2009 No. 4

GIANT DANIO *Danio aequipinnatus*

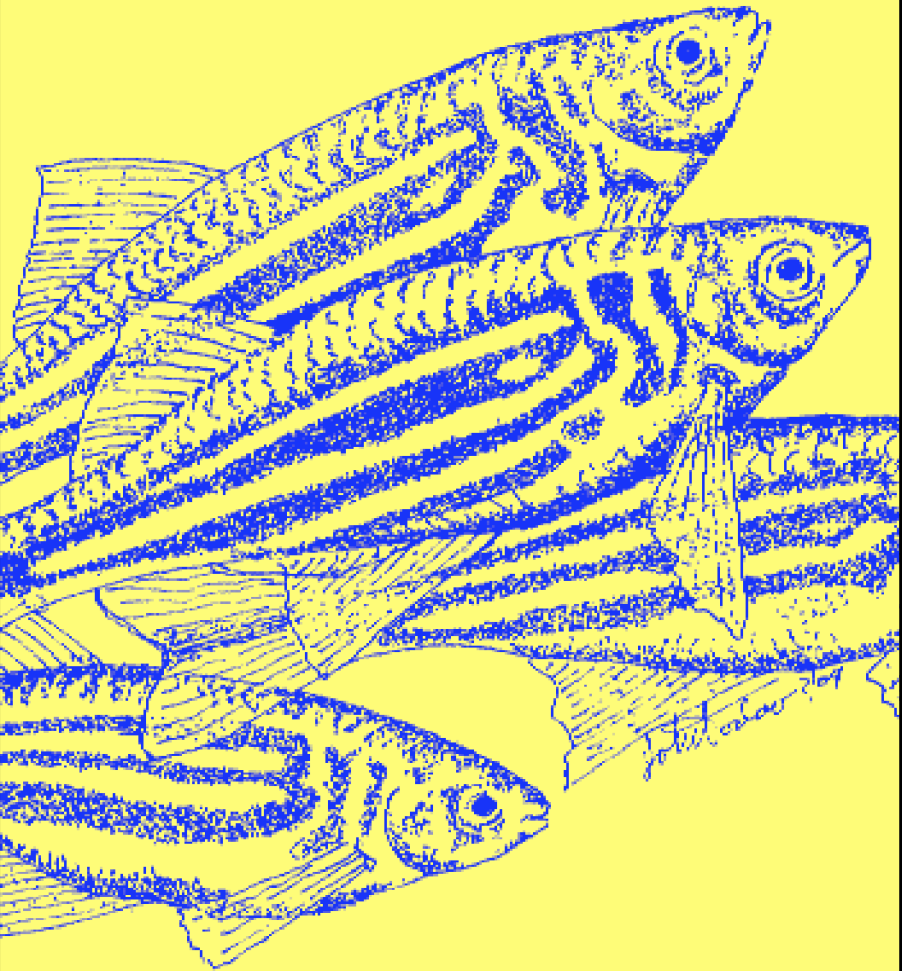


Illustration: John Todaro



AQUATICA

VOL XXIII • JANUARY/FEBRUARY 2009 • NO 3

CONTENTS

- | | |
|---|--|
| 2 Calendar of Events ~ 2009/2010 | 22 The Control Of Algae In Ponds |
| 3 Wanted: Help Finding Alewife | 23 The Practical Plant |
| 4 A Rough Ride With A Tiny Horse | 28 Sand Loaches, They Breed By Themselves |
| The Dwarf Seahorse | 31 Mudskippers: A Fish Out Of Water |
| 9 The Miracle Of The Fishes | And Walking |
| (A Story With A Moral) | 32 Exchange Editor's Report |
| 12 Spawning The "Galaxy Rasbora" | 33 Patronize Our Sponsors, They Support Us! |
| <i>Celestichthys margaritatus</i> | We Must Support Them! |
| 17 } Beauty In Motion | 34 Membership Application |
| The Giant Danio | |
| <i>Danio aequipinnatus</i> | |

AQUATICA STAFF

Editor:	John Todaro	Subscriptions:	Lita Goldberg
Copy Editor:	Kay Martin	Exchange Editor:	Izzy Zwerin
Marine Editor:	Open	Contributing Writers:	Mike Hellweg, John Todaro,
Plant Editor:	Izzy Zwerin		Sallie Boggs, Robert Fenner, Frank Greco, Izzy Zwerin,
Illustrations:	J. Todaro, C. Giam		David Banks Jr, Vinny Babino
Advertising:	Izzy Zwerin		

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

Aquatica is published bi-monthly (except July / August) by BAS. Original articles may be reprinted by other non-profit organizations, provided proper credit is given to the author and *Aquatica*, and two copies are sent to the Exchange Editor. Transcriptions of lectures may not be reprinted without written permission of both Editor and the Speaker. Distribution of articles on any online electronic service is prohibited without written permission from the Editor and Author. A notice of where approved articles have been posted should be sent to the **BAS Exchange Editor**.

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

ALL CORRESPONDENCE CONCERNING THIS PUBLICATION SHOULD BE SENT TO:

- Editor: **John Todaro**, 247 Middletown Road, S. Londonderry VT, 05155 Home: 802 824-3743 Fax: Same
- Please submit all articles to the Editor by mail, fax, or E-mail **ITODDYBAS@AOL.COM**
- Advertising Manager: **Izzy Zwerin**, P.O. Box 290610, Bklyn, NY 11229-0111 Cell Phone: 646 269-5926
- Exchange Editor: **Vinny Babino**, P.O. Box 290610, Bklyn, NY 11229-0111 Phone: 718 298-5978
- Membership: **Lita Goldberg**, P.O. Box 290610, Bklyn, NY 11229-0111 Phone: 718 375-0948

OFFICERS

President:	Joseph Graffagnino
1st Vice President:	Steve Matassa
2nd Vice President:	Marie Licciardello
Treasurer:	Denise Hershkowitz
Corresponding Secretary:	Kay Martin
Exchange Editor:	Vinny Babino
Membership Chairperson:	Lita Goldberg
Sergeant-at-Arms:	Joseph Cingari
Recording Secretary:	Adam Engerow
Web Master:	Bernard Deren
Editor:	John Todaro

BOARD MEMBERS

Robert DeBonis	Charles Stein
Stuart Hershkowitz	Izzy Zwerin
Alfred Licciardello	

PAST PRESIDENTS (In good standing)

Al DiSpigna
John Todaro
Seth Kolker

The **Brooklyn Aquarium Society Inc.** is a non-profit organization 501(c) (3) for people interested in the aquarium hobby and the study of aquatic life. The Society meets the 2nd Friday of each month except July and August at the Education Hall of the New York Aquarium at Coney Island, Surf Avenue at West 8th St., at 7:30 PM.

Meetings are open to visitors. Refreshments are served. Membership is \$25 per year family / \$20 individual / \$15 for students under 14. Send inquiries or membership checks payable to:

Brooklyn Aquarium Society c/o Membership Chairperson, P.O. Box 290610, Brooklyn, NY 11229-0011.

On occasion, the Brooklyn Aquarium Society uses its mailing list to send notices of interest other than society business to our members. If you do not wish to have your name used in this manner call the **Hotline** 718 837- 4455 and leave a message.

All articles in *Aquatica* are the opinion and experiences of the author or authors, and do not necessarily represent the opinions of the editors or staff of *Aquatica* or the Brooklyn Aquarium Society Inc.



BROOKLYN AQUARIUM SOCIETY CALENDAR OF EVENTS 2009-2010

MAR 13 ~ Bob Larsen ~ The Glorious Guppy ~ Freshwater & marine fish,

aquacultured corals, plants auction • Discount books & sales.

APR 10 ~ Tony Vargas ~ Diving On The Philippine Reefs ~

Marine fish & aqua-cultured corals, freshwater fish & dry goods auction • Discount books & sales.

MAY 8 Spring Auction ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods auction; including a 55 gal tank & stand • Raffles • Discount aquarium books & sales • Door prizes.

JUN 12 Meet The Experts Experts will answer your questions at a Freshwater fish table, Plant table, Marine table and a Live/Frozen foods table. Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction • Discount books & sales • Door prizes • Raffles • BAS Elections.

Summer Break July & August

SEPT 11 ~ TBA

• Freshwater & marine fish, aquacultured corals, plants auction • Discount books & sales.

OCT 9 ~ Fall Giant Auction • Freshwater fish, plants, marine fish, aquacultured corals & dry goods auction • Discount books & sales • Raffles • Door prizes.

NOV 13 ~ Greg Sullivan ~ Building Filter Systems For Fresh & Marine Aquariums • Freshwater & marine fish, aquacultured corals & plants auction • Discount books & sales

DEC 11 ~ BAS Holiday Party Members, their families & friends • All you can eat dinner. • Fish Bingo & prizes • BAS Awards presentation.

All Events held the 2nd Friday of the Month at 7:30pm at the Education Hall of the New York Aquarium ~ Surf Avenue & West 8th Street ~ Brooklyn, NY (unless stated)
We request a \$5 Donation for non-members, good towards membership the night of the event only.

FREE REFRESHMENTS AND FREE PARKING AT EVERY MEETING- UNLESS STATED

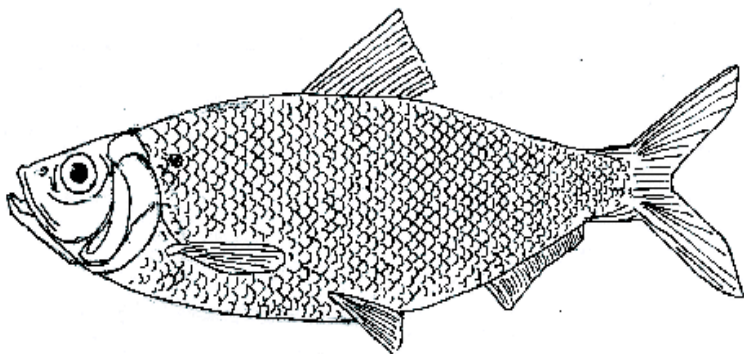
NOTICE TO ALL MEMBERS

A motion was made, seconded and passed at the March board meeting (3/7/08) that membership cards be made up and handed out the night a person joins the BAS. If you join or renew by mail you must come to the next general meeting to get your card. Publications will still be sent by mail.

Web memberships do not get a card, and only get publications that may be on-line. The cost of mailing has gone up and this is a cost-saving measure.



WANTED



Alewife (Alosa pseudoharengus)

Help Finding Alewife in the South Shore's Creeks and Rivers

Alewife, a foot-long herring species native to Long Island, are vital to the future of the Great South Bay and our coastal ecosystem. They split their life cycle between salt and freshwater (like salmon) and historically used most South Shore tributaries to spawn. Their arrival each spring was a boon to predators, including striped bass, bluefish and osprey.

Unfortunately, alewife runs have been decimated by dams, habitat loss and declining water quality. While healthy populations exist in a few rivers, little is known about their status across the South Shore. Documenting these spawning runs is an important step for guiding alewife restoration efforts on Long Island.

Volunteers are needed to watch for spawning alewives in April and May. Observers will look for alewives for just 15 minutes a day in a stream near them. Volunteer training workshops will be held in March.

Interested in Helping?

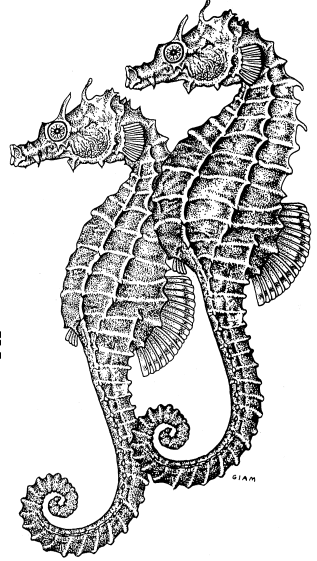
Please contact Brian Kelder
at the Seatuck Environmental Association to learn more:
bkelder@seatuck.org or (631) 626-1269

Visit the South Shore Estuary Reserve Office at www.estuary.cog.ny.us
for more information about alewife and the 2009 survey.

Mike Hellweg - First published in *The Darter*, Missouri Aquarium Society
 Aquarticles - <http://www.aquarticles.com>

A ROUGH RIDE WITH A TINY HORS

Hippocampus zosterae THE DWARF SEAHORSE



The Dwarf Seahorse, *Hippocampus zosterae*, is a truly diminutive creature. The name in print on this page is longer than the fish is in real life! It is a truly amazing animal that many people don't even believe exists. Until recently, it was the smallest member of its genus. But now two more diminutive Seahorse species have been found - one of them just within the last few months.

A fish that swims upright with the head of a horse; a high-powered vacuum / trapdoor contraption for a mouth; an armor plated body shaped like the knight of a chess set; a prehensile tail like a monkey; a nearly invisible dorsal fin that beats 75 times a second; males that go through labor and give birth to living young; eyes that move independently of each other like those of a chameleon; the ability to change color; and even to grow camouflage. Wow! And it's for real, not a creature of fantasy!

Ever since I was young, I've seen the ads in the classified sections of various magazines: "Live Sea Horses! Males give birth to cute Sea Ponies! For just \$1.00 [okay, I've seen the ads for a LONG time!], you can bring these

mystical creatures into your home!" I love reading ads - ads of all kinds, but especially aquarium and hobby related ads. It often amazes me what the adman will come up with to get you to buy whatever it is that he is hawking. Remember Sea Monkeys™? What an amazing ad campaign for brine shrimp! But the amazing thing about the ad for the Seahorse is that it doesn't have to make anything up to make these fascinating creatures desirable. The only drawback, and it is a big one, is that they are difficult to properly care for. In fact, aside from the Dwarf Seahorse, most Seahorse species are better left to the dedicated specialist, or in the wild. In this article I want to share some of my experiences with trying to keep and breed these magnificent

miniatures.

Earlier this year, a hobbyist looking for some of the fish I had for sale on Aquabid contacted me. He wanted to trade, not buy, fish. Usually I'm not too interested in doing this since you don't really know with whom you are trading and there is no umbrella organization like the AKA or ACA to regulate the trade. But what he offered in trade was too tempting! He had a group of tank raised Dwarf Seahorses that he wanted to trade for a group of my Swordtails! I hastily accepted. I could afford to lose a group of juvenile Swords and the postage for the chance at getting a group of the long-coveted Dwarf Seahorses - and tank raised at that!

I quickly set up one of my Show tanks (which I normally keep just for the MASI annual show) for the Seahorses. It's one of those fancy Marineland Eclipse 6-gallon tanks with the wet-dry power filter and light fixture built in. It would be perfect! I filled it with 6 pounds of crushed coral and mixed the salt mix into a 5-gallon bucket of water. I did not add a heater - they would be fine at room temperature. **Kathy Deutsch** helped me out with a starter of Caulerpa, (a funky wiry species I have not identified yet) and I picked up 5 pounds of live rock. The tank was ready. While I was waiting for the Seahorses to arrive, I started seeing all kinds of little critters crawling about the tank. This came back to bite me, but more on that later.

I shipped out the Swordtails right before one of the interminable snowstorms we experienced last winter moved in. They arrived just fine, but we decided to wait until later for him to ship the fish to me. About a week later, he shipped the fish. And another one of those nasty snowstorms rolled in. My mail carrier carefully

delivered the tiny box to me 3 days later. I was amazed. He didn't use my comparatively giant box (12 x 12 x 12 styro) to ship the fish back. He put them into a 5 x 5 x 5 cardboard box! There was no styro - they were wrapped in newspaper! I figured they would be dead for sure. I carefully unwrapped the bag, expecting the worst. But they were all fine! The water temperature was 56°F, but they were all swimming around the bag looking none the worse for wear. Here I learned Lesson #1 - they are VERY hardy!

I put them into a small bucket, and started a drip line from the tank to the bucket. I did not want to warm them up too quickly, so I tied a knot in the line to slow the drip to just a drip every five seconds or so. A couple hours later, they were swimming in a bucket of mostly my water. I carefully netted them out of their bucket and put them into their new home. I refilled the difference in tank water with some more fresh salt water that I had mixed up the day before. Never add the shipping water to your tank. Here I learned Lesson #2 - they are deceptively fast and are more difficult to net than you would expect! They can really get moving when they need to! They straighten out and go for broke. And they can hang onto the edges of the net and refuse to let go! Moving them to their new home was an amusing and interesting experience.

Once in the tank, I could see them more clearly. I had 9 fish - 7 females and 2 males. And one of the males was bulging. They settled in quickly, and went about exploring the tank. Here I learned Lesson #3; a six-gallon tank is too big for 9 Dwarf Seahorses. As they settled in, they disappeared! It took me a little longer each day to find them as they got better

and better at blending in with their surroundings. People who visited the fishroom just smiled and said something like "sure, there are all kinds of Seahorses in there!". If I couldn't see them and I knew where to look, I guess they could not see them at all!

As soon as they were all in their new home, I gave them a feed of newly hatched brine shrimp. Here I learned Lesson #4; the Eclipse Six filter is very efficient! It removed most of the live baby brine within a few hours. After this, I turned off the filter whenever I fed the fish. But the Dwarfs also learned; they started hanging around the inlet to the power filter when I turned the filter back on. Smart little guys!

NEWLY HATCHED brine shrimp is the preferred food for Dwarf Seahorses. If it is more than 36 hours old, it needs to be fortified with a HUFA (Highly Unsaturated Fatty Acid) supplement like Selco®. If it is NEWLY hatched, it still has plenty of nutrient value for the Seahorses, and can serve as their sole diet, unlike with the larger Seahorses. After the third molt, which occurs at about 36 hours post hatch, the brine shrimp has little nutrient value and needs to be fed (or "loaded") with a supplement to make it more nutritious.

The next day after arrival, the bulging male presented me with 3 baby seahorses. Two of these were stillborn (I assume from the stress of shipping), but the third was actively exploring the tank looking for food. It was a long, skinny, miniature copy of mom & dad. All stretched out, it would have been barely 3/8" from tip to tip. I figured the live baby brine would be too large for it, but it managed just fine. I watched for a while, and it carefully stalked and ate several shrimps while I watched. Hey, this was going to be easy! Yeah, right...

A little less than two weeks later, the same male presented me with a batch of 8 little ponies. The other male never did produce any fry - maybe he was already beyond his reproductive age - I don't know. I didn't realize how much the first pony had grown until I saw the newborns. Wow! They grow fast! I put a nylon net breeder in the tank to allow the fry something to hang onto so they could feed near the surface where the majority of the brine shrimp congregated after an hour or so. Here I learned Lesson #5 - They are eating machines! Within a few hours, most of the brine shrimp was gone, and the babies were bulging - so were the adults.

I did some research in a couple of books on Seahorses and found out that the gestation period of the Dwarf Seahorse is only 10 days! Not only do they grow fast, but they develop quickly from egg to pony! During their breeding season, the male is almost always in some stage of pregnancy. It didn't take long until that one little male had produced quite a few little ponies. I have also read that male and female seahorses pair bond. Some authors claim it is for life, others claim it is just for one breeding cycle. Well, that little stallion and those little fillies certainly never read those accounts. At one time or another, I saw him entwining tails with at least 4 of the 7 females! Interestingly, the other male never seemed to be interested in the girls, only in food. He was always the first one to the feeding area when I was in the fishroom.

As I became more familiar with my fish's behavior, I was able to watch the mating dance of the seahorse. It is much more elaborate than that of the other livebearers I have observed. The male puffed his pouch at the female; they bowed to each other, entwined tails,



and rose up together in the water column with their bellies touching. They did this several times, and I guess one of these times the female actually transferred eggs to the male. Some sources mention that you can sometimes see the eggs, as one or two miss the pouch and fall to the bottom of the tank, but I did not see this.

Here are some other tidbits that I learned through reading and observation - they are presented in no certain order: Dwarf Seahorses spend much of their time hanging upside down in the current, searching for food. Don't get excited, this is normal. They seem to change color fairly regularly due to changes in mood, etc. Each fish looks a bit different and you can easily recognize individual fish after a while. Certain fish seem to have a certain "basic color" that they maintain most of the time, but it darkens and lightens throughout the day, and as they interact with one another. Dwarf Seahorses have small broods - even large males will only deliver 8 - 10 ponies. Males seem to be always pregnant during mating season. They usually mate within a day or two of delivery. Don't let them go even a day without food - they don't have a proper stomach, and due to their exoskeleton they do not build up fat reserves, so they need to eat constantly. If you can't provide food for them on a daily basis, don't try to keep them. Young Dwarf Seahorses will also eat freeze-dried Cyclopeeze. I tried the frozen stuff, too, but they seemed more interested in the way the freeze-dried stuff floated and twisted in the current. You can have quite a few Dwarf Seahorses in a 6-gallon tank. At one point I had more than 40 of them happily swimming about. But that is where disaster set in.


At first, I lost a few of the adults. The other male that didn't

deliver any fry went first - I suspect due to old age. Dwarf Seahorses only live for about a year, and he may have already been 10 months or more old when he arrived. Then I noticed that there were fewer fry coming up to feed. At about the same time, I noticed a large bloom of Hydroids, including a group that sexually reproduced and produced their free-swimming, jellyfish like Medusa stage. Hydroids eat live baby brine just like the Seahorses, so they were prospering on the same food as my fish. For those of you who don't know what they are, Hydroids are a group of animals related to Anemones, Hydra, Corals, Jellyfish, and other stinging animals. They look like miniature Anemones, with a fat oral disk and short, fat tentacles. They don't eat adult Dwarfs, nor do they seem to eat baby Dwarfs. But they do sting them and can cause fatal injuries to the ponies. Everything I read said that there was no cure, that I was doomed to failure.

But there is a cure - the same thing many hobbyists use to kill Hydra in freshwater tanks. I dropped a quarter tablet of Fluke Tabs® into the filter. The next day, all of the Medusae were gone, and most of the Hydroids had closed up. By the end of the week, all of the Hydroids were gone, and I haven't seen any since. However, the Fluke Tabs® kill other Inverts, too. I lost a nice group of Feather Duster Worms that was growing on the live rock, some sponges also declined and later died, and I lost several other little creepy crawlies that were pretty neat. Since then I haven't seen the tiny little starfish that came with the live rock, either.

But even after this, day by day I was seeing fewer Seahorses, and no babies. Something was going on - but what? I pulled all of the live rock out,

looked it over closely, and put it back in - nothing there. Or so I thought! Here I learned lesson #6 - the nasty little creepy crawlies can hide VERY well. A few days later I found my very pregnant male sticking out of a little hole that I had not noticed before. I gently pulled on him, he struggled a bit, and something pulled back! Eventually I worked him out of the hole, but not before the tiny Pistol Shrimp that held the other end had done fatal damage. The Pistol Shrimp disappeared back into his little hole. I removed the live rock immediately from the tank. Mr. Pistol Shrimp wasn't going to get anymore fresh

Seahorse meals! This is where I learned Lesson #7 - don't use live rock with Dwarf Seahorses. Too many of the cute little creepy crawlies that come with it can be deadly to your little Seahorses. Live rock is great in other situations, but keep it out of Dwarf Seahorse tanks! Since I removed the live rock, I haven't lost a single Seahorse. Unfortunately, all of the fish I have left are females. So I guess I'll have to break down and respond to one of those ads in the back of the magazines to get another male! After all of these years - the adman will finally get me! 

TO SUMMARIZE THE BASIC CARE REQUIREMENTS:

1. Small marine tank - the smaller the better. A 2-1/2 gallon tank would be perfect.

2. Standard marine mix - around a specific gravity of 1.024. Room temperature is fine - but keep it below 80°F.

3. A sponge filter is fine; in fact, it's probably better than the power filter I use.

4. Give them plenty of attaching places. Plastic plants, Caulerpa (first treated with Fluke Tabs®), and other décor work great.

5. Add a few tiny inverts to help with cleanup - turbo snails for algae control, maybe a small starfish, and a few tiny shrimp (the "little?" red guys from Hawaii are best - though I don't know what they are called).

6. Feed NEWLY HATCHED live baby brine shrimp daily - and feed a lot of it. They eat more than you might think! One of the studies I read said that a young seahorse could eat 3000 baby brine shrimp every day.

7. Don't use Live Rock or untreated (with Fluke Tabs®) Caulerpa. Don't add any predatory shrimp or large starfish (which can also eat small seahorses!). Also, stay away from Hermit Crabs - even the tiny ones will eat the Dwarfs if they get a chance. Also, if you want to try keeping marine fish - use another tank. The Dwarfs just won't be able to compete.



John Todaro - BAS

"The Miracle Of The Fishes"

(A story with a moral)

I trust you've all read my little report about the power outage I and my dear departed angelfish suffered back on December 12, 2008 due to an ice storm that had all my power out for over 30 hours?

Well, my trials and tribulations with power outages didn't end there! As I mentioned in my last sad tale I also have a small fish room in my basement with fourteen tanks of killiefish that I thought would have also gone to the big fish tank in the sky... but luckily the basement seemed to be warmer. After 30 hours of no heat, it was warmer, but not by much, but enough so that they were all alive and survived the ice storm. That was the good news...

But wait; don't cheer so fast! Flash forward to January of this year and all seemed well in the world.

My son was back in college, his Christmas break over, and I had a friend visit me for a week. I looked forward to the company.

Now you have to know that even in the dead of winter with all the snow that we get here in Vermont, the roads are always kept clear. It's a matter of both life and death, and tourists' and skiers' money that force them to make sure you can see blacktop even in the

worst snow storm. I'm not always sure which they think is more important life and death or the money?

In any case, my friend and I made a couple of trips to the Manchester Outlet Malls to do some shopping. She purchased a couple of pair of shoes and slippers. We did some sight-seeing trips and went out for dinners at a couple of the better restaurants up here.

So, as you can imagine I didn't spend a lot of time with my fish! It sort of skipped my mind...and anyway I knew they could survive without me.

They were in well set-up planted tanks and could fend for themselves for a few days...as I enjoyed the company of my friend and showed her the beauty of Vermont.

After a very pleasant week, she left with all her newly acquired treasures, and I remembered I had a fish room that needed some attention.

As I went down the basement steps I knew something was not right. I

didn't hear the reassuring sound of bubbles from the fish room air pump. It was too quiet, much too quiet!

I continued to the area in the basement next to my woodshop, where I built my fish racks, to find to my dismay that my air pump wasn't working', also the lights were out and the heaters were off. Nothing was working...but the ceiling lights were on! What's going on here?

Now when I built the fish room racks, I ran the power lines from the workshop and wired all the fish room outlets from them.

I set it up so all the tank lights were hooked up to an automatic timer that would turn them on and off at set hours. The heaters were plugged into outlets that were always live. I always keep the heaters on all the time so I never plug the heaters into a timer.

As for the central diaphragm air pump, it was also plugged into a live outlet. The air-pump is connected to a 1/2 inch PVC pipe that runs above the tanks, with brass valves set into it every four inches. From the valves, airline vinyl tubing runs to the different tank's box and sponge filters.

A great automatic fool proof system, so I thought! The same system I had in my fish room in Brooklyn.

But it wasn't working! But how were the fish...

Tell me, did you ever walk into a fish room and be greeted by the sight of all your fish...floating upside down. Well, I've had the displeasure, and trust me...it's not a pretty sight.

More dead fish! I'm not ready for this! I'm not having any luck with fishkeeping up here!

How many days were the lights, heaters and filter off? I still don't know, but more than just the 30 hours which all

the fish in the fish room survived back in December. The realization that I had just lost all my fish was sickening. Not only that, I was pissed for not paying more attention to them for the past week.

No good deed goes unpunished. Ok, there was not much I could do for the fish', they were gone. But I had to find the reason for this local in-house power failure. Since I hooked the fish room outlets to the shop outlets, I started by checking the circuit breaker. It was okay, as I thought it would be. That meant the problem was in the line between the fish room outlets and the shop outlets.

Next, I checked the outlets in the shop with a tester. In this case, I used one I made from what's called a "pigtail" outlet. This is a rubber covered light bulb screw-in outlet with the power and neutral wires extending from the bottom. You can buy them in most good hardware stores. I got mine at Home Depot.

I tested the outlets until I found one in the middle of the run that didn't light the bulb when I put the wires into the respective outlet sockets.

Okay, so why wasn't it working? I turned off the breaker and unscrewed the box cover. Everything looked okay. All the lines were connected to the screws, but something must be wrong. I took a screwdriver and tested the screws to see if they were tight. They all seemed to be tight...wait a minute here's one that's loose! I tightened it and switched on the breaker. The fish tank lights and pump sprung to life!

So at this point, you're thinking the moral of the story is - make sure the electrical connections are tight!

Well, sure they should be tight, but that's not the moral of the story; let me continue!

So I've solved the mystery of why the power was off. I guess vibration in the house loosened the connection.

Okay, so now I knew what had happened. The mystery was over.

Now what to do about the fish? Start removing bodies and cleaning the tanks. Being a procreator, I thought maybe that's a job for another day and left everything running and went upstairs to more pleasant work on the computer.

The next day I figured I better get to cleaning those tanks and headed downstairs with a plastic bag for the fish and a clean new sponge and a box of kosher salt to clean the tanks.

I could hear the reassuring sound of bubbles as I went down stairs and I knew at least the so called "fool proof" system was working.

But when got to the tanks, I was shocked and amazed to see an unbelievable sight... all my fish were alive! Alive and swimming around like nothing had happened! I must be hallucinating. These fish were dead. I saw them floating upside down just yesterday; how could they be alive today? What the hell is going on? I went from tank to tank; yes, even in the grow-out tanks, my killies were swimming around. I immediately fed all of them. Hungry little fish, they gobbled up the flake food in a frenzy. But they always did that.

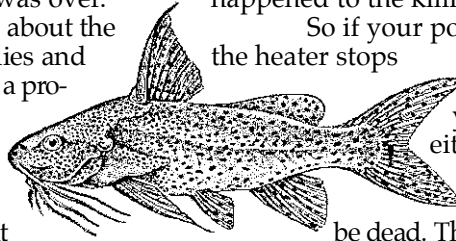
So what happened here?

The drop in water temperature over the days the power was out sent them into a state of suspended animation. Now I know I've seen this happen to goldfish when I had a pond back in Brooklyn. You'd think they were goners, but when I removed them from the pond and brought them into

the house in a 5 gallon bucket and let the water reach room temperature, the gold fish slowly became active again.

The same thing must have happened to the killies.

So if your power goes out or the heater stops



functioning and you see your fish either sinking to the bottom or floating, they may not be dead. They may simply be in a lethargic state of torpidness, and once the temperature raises, they'll become active again.

The moral of this story is: "Don't be so fast in disposing of what you think are dead fish; a little bit of procreation may be all they need." I know it worked for me in this case!


It didn't do much for all my angelfish in my 55 gallon tank!

But wait a minute...

After this fish room miracle. I went back up to feed my one lonely little tetra and saw something very odd, the tail of a 7-inch *Synodontis* catfish behind a larger piece of driftwood. So another miracle, another fish survived the great ice storm power outage of 2008.

How could I have missed a big live 7-inch *Synodontis* catfish when I cleaned out my 55 gallon tank and disposed of the dead angelfish and the other two *Synodontis* catfish... or were the angelfish dead?

Maybe the catfish was just too lethargic to move and I missed it, but the angelfish sure looked dead to me, but so did my killies... Did I remove the angelfish too soon? I guess I'll never know.

Maybe I should have been more of a procreator when it came to my angelfish! 

Sallie Boggs – GPSA Greater Pittsburgh AS

EDITOR'S NOTE: In a visit to a local fish store I found a tank full of these fish, now called Celestial Pearl Danios. They are young aquarium bred fish and I bought 7 of these beauties at \$4.99 each.

I will report in a future issue if I have been successful in breeding them.

JT

SPAWNING THE "GALAXY" RASBORA



The beautiful little fish called "Galaxy Rasbora" hit the fish world with a big splash. Ha, ha, get it, "big splash!" *Practical Fishkeeping* Magazine features it as "The next big thing" with the name *Microrasbora* sp. and a beautiful picture (<http://practicalfishkeeping.co.uk>). This was September 2006 and they said the fish had just been discovered a few weeks ago. (August). **Pete Liptrot** and **Paul Dixon** of the Bolton Museum Aquarium, in England, became the world's first fishkeepers to breed the tiny fish, after they successfully spawned the fish in late September 2006. "In our aquaria, they spawn either with natural plants, such as java moss, or artificial media, such as woolen spawning mops. Ripe females have a spot or dark pigmentation at the vent, and when selecting fish for controlled spawning we have used this characteristic with some success for indicating readiness to breed."



Mature Male

Liptrot says that, "although a number of males may chase females for long distances, spawning occurs when individual males take up a display posture alongside the female at the spawning site. The female is pushed into the spawning site and eggs and sperm are released."

According to **Tyson R. Roberts** "the species is believed to produce around 30 eggs per spawning. The eggs take three to four days to hatch at 24°C (75°F) and are free swimming after a further four. The fish then take cultured

micro-organisms and grow quickly, taking in adult coloration at 12 weeks." (Roberts, TR (2007) - *The "Celestial Pearl Danio", A New Genus And Species Of Colorful Minute Cyprinid Fish From Myanmar (Pisces: Cypriniformes)*. The Raffles Bulletin of Zoology, 2007 55(1): 131 - 140.) (Date of publication 28 Feb. 2007 National University of Singapore.)

About six months after their discovery (Feb 2007), the headlines read "*Galaxy Rasbora Under Threat*" and the aquarium trade was accused.



Mature Female

Before and after pictures of their small lake in the highlands east of Lake Inle Myanmar certainly showed devastation. It had changed from woodsy and clear to treeless and muddy. Fortunately, the species had already been bred by many aquarists in the United Kingdom. We were urged not to buy the fish unless we planned to breed them. No problem. I

almost never buy a fish unless I plan to breed them.

Soon after I read this, I noticed that **Elmer's Aquarium** had a tank full of them. I told **Dave** about the threat and he said he would not buy more of them. I bought as many as I could afford and told all the GPAS breeders I saw to get some and breed them. **Eric**

Bodrock was the first to bring fry to the BAP and he gave an oral report. He moved the adults to a new tank and 8 days later he saw fry in their old tank. My problem is that I never seem to have an extra tank.

Shortly after we all got the fish, they were officially named by Tyson Roberts as *Celestichthys margaritatus* in a paper in the *Raffles Bulletin of Zoology*. He has also given the fish the new common name of Celestial Pearl Danio.


Robert says that "the new species is a member of the cyprinid subfamily *Danioninae* and is most closely related to two danioins from Inle Lake in Myanmar, *Microasbora rubescens* and *Microrasbora erythromicon*.

The ponds are small and shallow, at most perhaps 30cm deep (12 inches), and maintained by seepage or springs. The water is clear unless roiled with a

recorded temperatures of 22-24°C (71-75°F) in January 2007. The present terrestrial vegetation is open grassland.

"Myanmar's Department of Fisheries (DOF) banned further exports of the species in February to allow the assessment of the conservation status of *Celestichthys margaritatus*, and have identified a number of new localities which harbor populations of the species."

This is the news, the bad news and the good news. For us in Pittsburgh, the good news is that we have several people breeding these beautiful little gems and we don't have to buy wild caught fish. In my opinion, this is the main purpose for a BAP program and one of the reasons I like to breed fish. These are gorgeous, gentle, relatively easy to breed and don't require a larger tank.

Give them a try. 

More information on the Galaxy Rasbora, or Celestial Pearl Danio

This is a newly discovered species. It comes from a few known locations in Myanmar and, due to both political events and over-collection, is difficult to obtain, but some do make it to the hobby.

If you should be lucky enough to obtain these fish please try to breed them. They cost \$8 to \$10 ea. or more and the price may go higher.

Keep them in a species tank; 10 or 15 gallons would be perfect and a 5 gallon tank excellent for breeding.

Read about them and research their care on the web.

If you go to [YouTube.com/watch?v=unq4fnDzMLM-87k](https://www.youtube.com/watch?v=unq4fnDzMLM-87k), you can see the fish's courtship behavior and spawning.

You can download the *Raffles Bulletin* mentioned in this article as a PDF at rmbr.nus.edu.sg/rbz/biblio/55/55rbz131-140.pdf.

You might even make some money breeding them.

Good luck.

JT

BEAUTY IN MOTION

The Giant Danio



FAMILY: Cyprinidae

SCIENTIFIC NAME: *Danio aequipinnatus*

COMMON NAME: Giant Danio.

REGION: Native to Sri Lanka and the west coast of India.

SIZE: up to 5 inches in the aquaria.

TEMPERATURE: Between 77°F - 82°F.

WATER QUALITY: pH 6.0 to 8.0 and dGH 30°

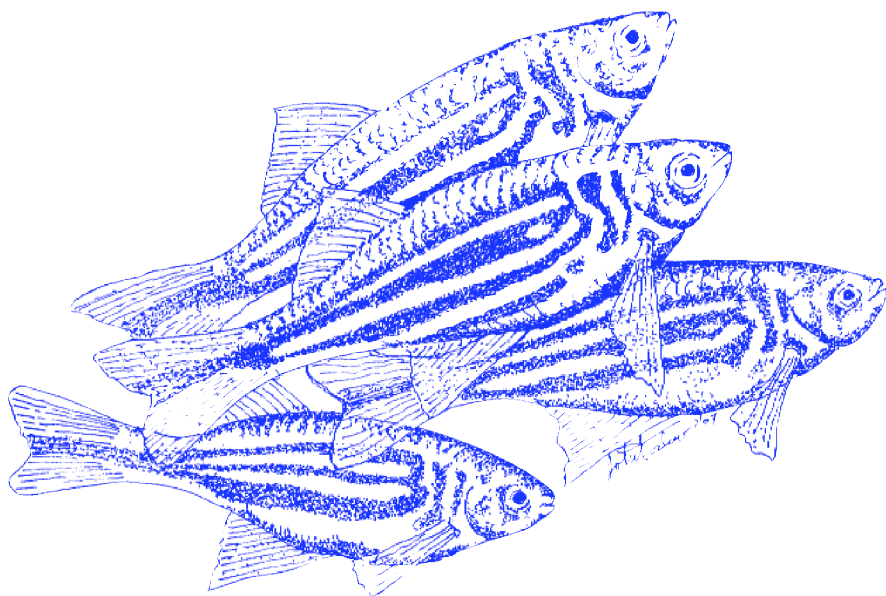
HABITS: A lively and active schooling species that should be kept in schools in a tank with plenty of space to swim. A good community fish.

FOOD REQUIREMENTS: Omnivorous; live, frozen, flake foods and some vegetable material.

SEX: Male is noticeably thinner with a blue stripe running straight through the tail fin.

The Female has less brilliant coloring and a more rounded stomach with a blue stripe that bends upward at the base of the tail fin.

BREEDING: Easy to breed. Needs a 20 gallon long breeding tank. Five to 20 eggs are laid after each pairing, with upwards of 300 in all. Remove parents after spawning. The fry hatch in 24 to 48 hours. Feed fry brine shrimp nauplii. See next page for more information.



Giant danios are an old favorite among aquarists, because of their peaceful nature and flashy colors. The species is a very active, colorful and easy to breed fish. As stated above, it's best kept in schools, the larger the better. They make a stunning sight as they speed through the water in amazing unison. They generally are not susceptible to diseases as long as you provide their basics needs: Clean water with regular water changes, plus good filtration and aeration. A thicket of bushy plants placed at one end or along the back of the aquarium offers them a place to hide and to spawn in. Their tank ideally should range from 30 to 55 gallons and up.

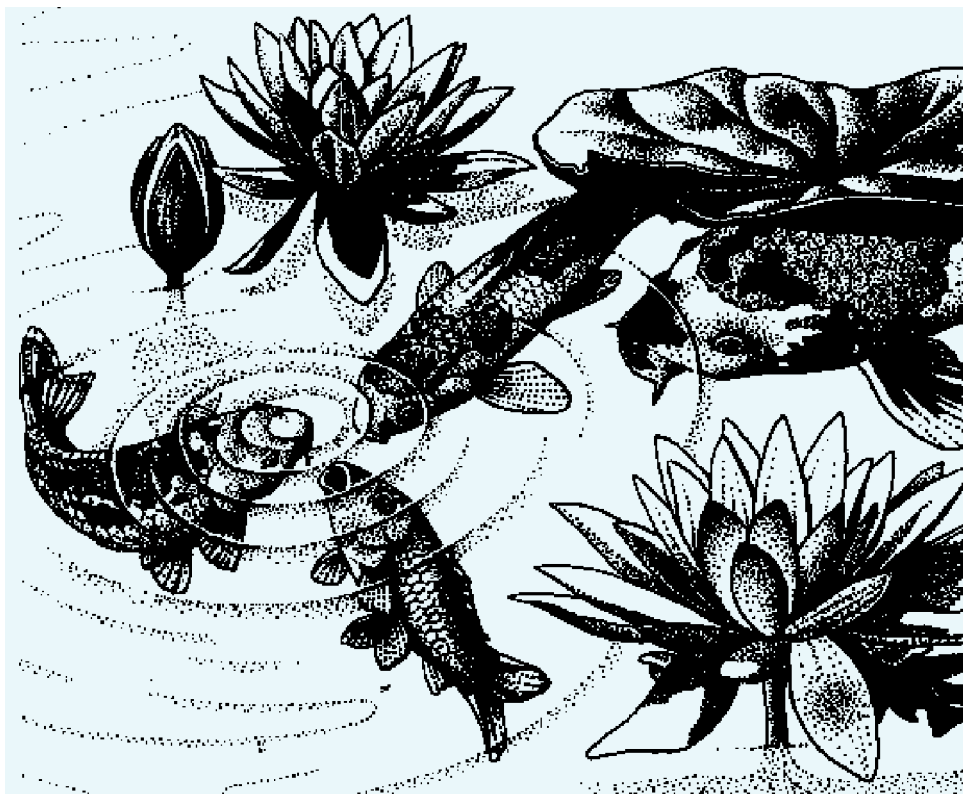
To spawn, use a 20 gallon long tank densely planted with bushy plants such as *Limnophila aquatica*, which is a native plant to this species, or *Cabomba* species, *Egeria densa*, or *Myriophyllum aquaticum*. Covering the bottom of the tank with marbles, pebbles, or placing a plastic screen an inch or so above a bare bottom is also a good idea, because even though the giant danio lays adhesive eggs among plants they may also spawn in open areas and the eggs will fall to the bottom and could be eaten by the parents.

They're very active spawners and hundreds of eggs are often laid. Remove the parents when spawning is over. The fry hatch in one to two days and for the next three to four days, they'll absorb their yolk-sac. When they become free swimming, feed with brine shrimp nauplii. They're easy to raise and when they're large enough, they can be added to your giant danio school and you can sit back and enjoy them!

Reference

- *Eyewitness Handbooks Aquarium Fish*, Dick Mills, Dorling Kindersley, 1993
- *The Encyclopedia of Freshwater Tropical Fishes*, Expanded Edition, Axelrod, TFH, 1986
- *Baensch Aquarium Atlas*, Dr. Rudiger Riehl, H.A. Baensch, H.A. Baensch, 1987
- *Encyclopedia of Aquarium Plants*, Peter Hiscock, Barron's, 2003

The Control Of Algae In Ponds



After battling algae infestations for twenty years in the waterscape maintenance business, I learned to look carefully at systems that never had algae problems. Yes, there are such set-ups, and you can have one too.

Perhaps you'll be one of those fortunate people who make adequate provision in the design and construction of your water effect to preclude having "green water" problems. If not, or due to nutrient laden water and intense light you have "green soup" or you'd like an introduction to the whys and wherefores of algae and their control, read on.

The simplest oxygen-producing organisms on this planet are the algae. They are for the most part autotrophic (self-feeding), have no complex organizations and no sexual reproduction. They contain chlorophyll and other pigments, but have no true roots, stems or leaves.

Algae occur wherever there is sufficient light for photosynthesis, water and nutrients, in fresh and salt water, in soil, hot springs, snow, even on and in plants and animals. Along with some fungi, there are algae that live on bare rock as lichens in such forbidding areas as the Arctic. This is their world.

Algae Groups Include:

Blue Green Algae/Cyanobacteria:

More closely related to bacteria than other algae, they are often the scum on polluted, under-aerated / circulated, over-fertilized waters. They are typically bluish-black and slimy. Forms include single cells, clusters, threads and chains.

Green Algae: Are the most commonly encountered; they're found everywhere. Occur as floating, attached, swimming forms and seasonal surface blooms.

Brown and Red Algae: These are mostly marine; you probably know them as

kelps, attached seashore forms.

Diatoms and Dinoflagellates: Are single celled, microscopic algae, ubiquitous, and mostly beneficial in terms of nutrient cycling, oxygen production, competition with undesirable forms. Though diatoms may appear as brownish scums, they rarely cause problems in ornamental water features.

Other Algae Groups: *Euglenoids*, golden brown, yellow green algae and others that are generally not a problem in captive systems.

Overview of the Algae

Sometimes they're beneficial functionally and esthetically, and other times unwelcome guests, the algae are easily controlled if understood. Most can be avoided by designing and constructing your system to reduce light, and nutrient availability; algal proliferation, related problems can be lessened through regular maintenance.

In terms of long term cost, safety and ease of use, algae control methods can be divided into three categories on the basis of most to least appropriate; these are biological, mechanical and chemical controls. A few pertinent facts hold for all methods:



Prevention:

Chemical Activity

Algae thrive in harder, alkaline water. It is advantageous to render the non-water part of their environment chemically inert. Rock and concrete should be treated to lessen reactivity with the water. When constructing, this may involve acid-washing to leach out alkalinity, use of plastic cements, foundation coatings.

For non-biological systems it is most appropriate to coat the basin with a sealing material. Some proper types are asphalt emulsions, chlorinated rubber paints and epoxies. Marine paints and others may be formulated to be toxic; read the labels carefully.

Rocks and other decorations should be checked for reactivity. They should not be detectable by smell or taste, or they may be checked by chemical analysis. This applies to all rock, including the waterfall, that comes in direct contact with the water. A simple assay involves breaking off a small piece of material, boiling it in water, allowing to cool and testing the cooled water in a container with inexpensive "test fish."

Circulation:

Most algae do better under stagnant conditions. Keep your water in motion with air pumps and/or pumps.

Light and Heat:

The more intense the light over the longer period of time, with the deepest penetration to the bottom, the more the algae will grow. Aquatic plants, circulation waves, shade from trees, walls, lathe, screen will help. Make your system's sides as steep and deep as possible and safe. Color the basin/s as dark as possible to reduce light reflection. Black is the best

despite its heat absorptive properties. During construction, dyes can be added to the concrete. The lower and more stable the temperature the better.

Filtration:

Please see the Pond Filters pieces for a more complete discussion of different forms of filtration. Particulate filters are least useful, but do aid by simply removing sediment that might provide space for algae growth. Chemical filtration is generally unrealistically expensive, but use of water-softening clays and carbons may go some distance in preventing full-on blooms if within your budget.

Biological filters:

Of several designs for systems with livestock, if properly engineered, are the key factor in keeping your system balanced in your favor. You can win by launching biological warfare with bacteria cultures purchased at a tropical fish store and having these micro-organisms live in your filter, preventing algae growth by removing nutrients from the water.

Plants:

Are useful in controlling algae. They cut down on light and use some of the nutrients otherwise available to algae. Water hyacinths, water lettuce, duckweed, alligator grass, lilies, and oxygenating grasses are among many excellent choices.

Pollutants:

Control of these is very important. Food for algae comes from feeding your livestock, fertilizing your plants. Be careful using fertilizers around your pond; a very small amount can produce several orders of magnitude weight in unwanted algae growth. Keep soil, toys,

children, basically any and everything else out of the water.

Frequent partial water changes are the order of the day for all kinds of aquatic gardens. They are the best way of diluting nutrients.

Control Methods:

So much for prevention; let's discuss ongoing problems:

Biological Controls:

Algae Eaters: Snails are the most widely used scavengers, but not always a good choice. Snails carry diseases for fishes as well as humans. Many are bisexual and hard to control population-wise, others die mysteriously, polluting the water.

Re-read about snails and check with your local aquatic garden regarding appropriate available species. Some fishes, like small koi, Dojos (*Misgurnus anquillicaudatus*) are useful as biological controls.

Mechanical Controls:

Second best to prevention and biological controls are manual methods of algae control. Routine brushing of the basin walls and vacuuming helps during partial water changes.

Two of my favorite all time tools for pond-keeping are a razor-blade equipped hoolah-hoe I saw first at the Disneyland Hotel in Anaheim's koi pond for giving string algae a "crew-cut," and PVC pipe notched at the end to catch, twist, turn and remove hair algae. Hmmm, I'm developing a strong desire for spaghetti!

Complete clean-out acid and/or bleach washes are sometimes appropriate. Rock salt is a good abrasive to use in scrubbing biological ponds, leaving some algae behind.

Another type of mechanical /

physical control involves the use of ultraviolet sterilizers (which we'll cover separately) to chop up the DNA of free-floating algae, and protein skimming (aka foam fractionation) with or without ozone to remove algae "food." These high-tech options are only mentioned here in passing as being too pricey and touchy for the majority of ponders.

Chemical Means:

Using chemicals to control algae is the least desirable route in terms of cost, safety and long term effect. With most chemical algaecides, you can't have live plants.

There are several brands of chemical algae killers on the market, many of dubious value. The problem is that they treat the symptoms only without dealing with the cause(s) of the algae problem, i.e. what are the factors that are contributing to this system being out of balance? Beyond this, all algaecides are to some degree poisonous to other livestock; be careful.

If you do use algaecides, keep a close eye on the dosage and be on the lookout for below acute toxic side effects. Several products state that under "bad conditions," the dosage may be doubled or tripled. If your water starts foaming and your fish start gasping heavily at the surface, remove the fish or change a large part of the water.

An Integrated Management Approach:

Realistically, you will have to do what everyone else does: call on all the above mechanisms to balance the degree of cleanliness / lack of algae with the costs of maintenance. Controlling algae should take the form of:

1) Proper construction, filtration and

water circulation.

2) Minimizing nutrient availability by under-feeding, preventing run-off and excess fertilizer from getting into the water.

3) Using your test kit to measure nitrates and keep them at an acceptably low level through desirable plant growth and water changes.

4) Using shading as necessary to cut down light and heating.

5) Manually removing algae and nutrients through vacuuming, netting and filter backwashing.


6) If absolutely necessary, stooping to the use of chemical controls; most preferably copper compounds.

A Conclusion:

After all this talk of controlling algae, it ought to be pointed out that sometimes it's better to "let it be."

Algae growth is an indication of a normal, healthy state. Within moderation, algae help keep the pond balanced and

stable. The trick lies in the word moderate. If you can keep the algae groomed, in one desired area or cropped to a short length on the walls of your system, this will be to your advantage. By having desirable forms, you can reduce the incidence of algae blooms.

Algae come in many shapes, colors and sizes. Many are beautiful, and often fish do well in algae-infested waters. If you want to control algae in your pond at least enough so you can see your fish, the above suggestions will help. 

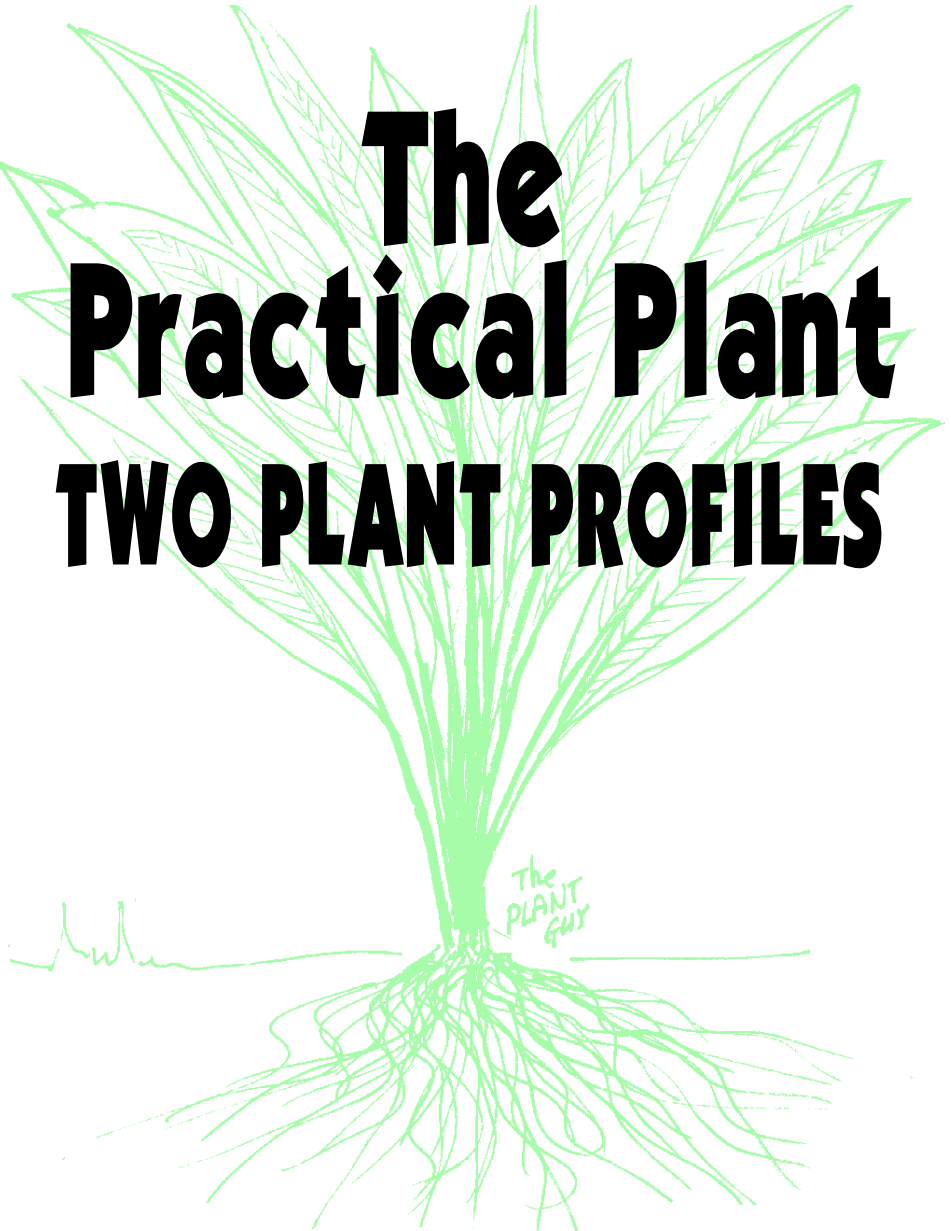
Bibliography/Further Reading

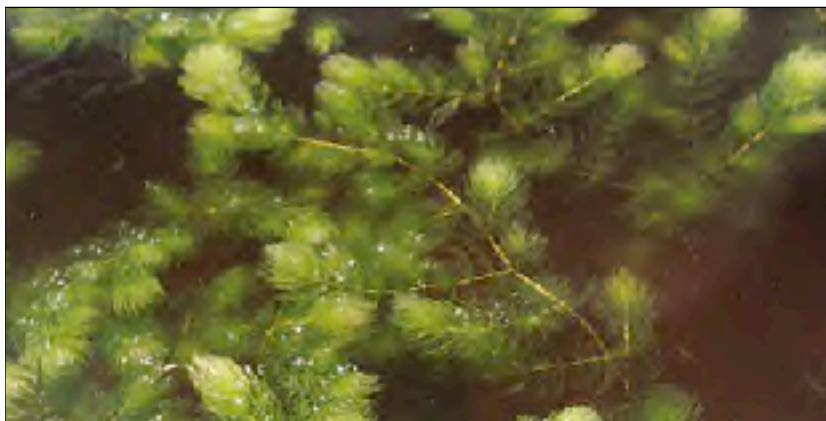
- Blasiola, George C. 1991. *Controlling algae in garden ponds; a review of preventive measures*. Pet Age 3/91.
- Ford, David. 1986. *Why does my pond go green?* FAMA 6/86.
- Hanby, David S. *Swamp filter... a revolution in pond keeping*. FAMA 2/96.





The Practical Plant TWO PLANT PROFILES






1 Propagating:

Ceratophyllum demersum

Ceratophyllum demersum is a stem plant. The common name is “Hornwort.” It can grow up to three feet tall, but is tolerant of frequent pruning, so it can even be kept as a midground plant. With regular pruning, the plant can get fairly bushy. The plant is a fast grower, making it a good choice for algae control. This plant is found worldwide. It does not require intense lighting, but would certainly benefit from it. Depending upon whom you ask, there are up to thirty varieties found around the world. Most of these prefer cool hard water. The one that I have kept is a native of Mexico and it prefers softer and warmer water. The Mexican variety is also far more decorative as it has a deep red stem. The stems and leaves tend to be a bit hard and brittle. This makes it a plant that your fish are not likely to eat.

I placed it in a twenty gallon long. I am using Caribe Sea’s “eco-Complete as a substrate. I have a Whisper 30 hang on power filter. The aquarium is heated to 78° to keep my Tetras happy, but this plant will tolerate fairly cool water. I keep the GH about 60 and the pH is 6.8. Since the aquarium is only 12” tall, I chose a fixture made by Coralife called the “Aqualight T-5 double.” I would describe the lighting on this aquarium as the “upper” end of moderate. The system is CO2 enriched as well. Since the bio-load in this system is fairly heavy, and many of the other plants in this tank are slow growing species (like Java Fern, Bolbitis, Anubias and others), I only

supplement this aquarium with potassium and trace elements to deter algae growth from excess nutrients, a common problem with slow growing plants. To propagate this plant, just take some stem cuttings and insert them into the substrate. Hornwort is usually used by aquarists as a floating plant. In fact it is a plant which does not grow true roots. You can plant it in the substrate. If you do so, it will develop root like structures (called rhizoids) to anchor itself.


Overall, this is a great plant. It will thrive in moderate to intense lighting, soft to medium hard water and tropical to temperate temperatures are fine. 



2 Propagating: *Cladophora aegagrophila*

This is a true oddity sold under the common name of "Moss Balls." They are not mosses, but in actuality an algae. It is the only form of algae sold as an aquarium plant. They look like fuzzy green balls. The largest I have ever seen was about the size of a baseball, but usually sold closer in size to a golf ball. The algae can actually grow as a sheet or cushion as well. The only literature I could find claimed that you cannot propagate these things, but it is possible.

Since I thought it couldn't be done, I wasn't even trying - but it happened, and I'll tell you how. I have some of these in most of my tanks, but the only one that ever reproduced was in a 5 1/2 gal. aquarium housing a few Corydoras catfish. This aquarium is kept at a temperature of 78°F. The water is slightly soft and slightly acidic. I don't use any type of fertilizers or Carbon enrichment in this system. The filtration is performed by a "Zoo Med 501" canister filter. I had gotten some duckweed in the tank and since my schedule had become somewhat hectic, I had fallen way behind in maintenance. The lighting on this system is fairly strong (18 watt Compact Fluorescent) and the duckweed had grown out of control. In fact, the duckweed had gotten so dense it blocked out nearly all the light. It was really quite dark in this tank; I could barely see inside it. Fortunately, the only other plants in this aquarium were some Dwarf Anubias and Java Ferns which were

none the worse for the wear. When I finally got around to cleaning this mess up, I discovered a mushroom like protrusion on the surface of the moss ball. These things grow quite slowly so it took some time for this "mushroom" to put on some size. When I felt comfortable that it was large enough, I just snipped it off. Since none of my other specimens have ever done this before, I believe that it was the extremely low light levels which triggered it. These plants come from the "tidal zone" of large freshwater lakes. I understand that it is the wave motion which gives them their characteristic shape. I found that in my aquarium, without this water movement, the new plant did not assume the ball shape, but grew into more of a sheet. 

EDITORS NOTE: Members with questions about aquatic plants can contact **Isidore (Izzy) Zwerin**, our plant editor. You can call him at (718) 449-0031 between 7pm to 10pm, Monday to Friday.

David Banks Jr. -

First published: *In Depth*, newsletter of The Tropical Fish Club of Burlington.
Reprinted from Aquarticles.com

Banded Mountain Loaches, They Breed By Themselves



It has been said very often that it is not the hobbyist which breeds fish, it is the fish that breed. All we can do is try to help, and sometimes we don't even do that. Such was the case when our *Acanthocobitis urophthalmus* spawned. I just went in one day and noticed some strange behaviour going on in our ten gallon planted tank. It just so happened that the only fish in the tank were the sand loaches, as the last of the other fish, Odessa barbs, had just died of old age. The other thing in the tank was a couple of small apple snails.

We bought the loaches at a local pet store; they didn't know anything about them and I had never seen them before. But we bought all they had; I think there were about five. They were very inexpensive, only \$1.49, from what I remember. I

going to get very big. They were just under two inches when we got them and they did grow a little, but not much. They definitely fattened up some too as they got older. They were very thin and long and would perch themselves on the bottom of the

cream colored, or sand colored, with faint vertical stripes the entire length of their body. They did seem to chase each other from time to time, but never for very far, and they never did any damage to each other. They seemed somewhat shy, but would come out from the very thickly planted *Anubias* and *Windelov* Java ferns whenever food was in the tank. You would also see them around the tank just hanging out. Overall, they seemed like a great little fish to have.

I had seemingly done nothing to help them spawn, but in reality I guess I had. They very much enjoyed the very thickly planted tank, and I had provided them their own tank with no other fish. I apparently had also given them a huge food source. After noticing that they had spawned, I had also noticed that the two apple snails were nothing more than empty shells. I'm not sure if the apple snails had just died or if the loaches had killed and eaten them. Loaches in general are known to be very good at eliminating unwanted snails from an aquarium, but these snails were very large by comparison.

The breeding activity was very apparent: there were three loaches left in the tank when the first spawning took place. One was very slender and not quite as big; the other two were more bulky and a little bit larger than the other was. I believe the smaller slender one was the male. I walked into our fishroom and immediately noticed that something was going on in this tank. Two of the fish, what I believe were a female and the one male, were darting around the tank very quickly together. They would stop and the male would very quickly try to wrap himself around the female and

then they would be off again. I noticed very small opaque eggs everywhere and as I watched, saw eggs going flying several times when the pair were "wrapped" together. The eggs would just go everywhere when they released from each other and started darting all over the tank again. I tend to feed the fish just before going to bed; it was already very late, but we watched this for about twenty minutes. They were apparently at the end of this spawning cycle anyway since I only saw eggs a few times. There were hundreds of eggs all over the tank! I was amazed at how many eggs had been produced from this fairly small fish. Maybe the male had been spawning with both females, but I only saw him with one.

I decided to siphon some eggs out to a separate tank to see if I could try to raise some of them. I left many eggs in the spawning tank hoping they would survive, but by the next morning I couldn't see a single egg. I still hoped that some would make it since the tank was so densely planted, but I never saw any fry in that tank. The ones that I had taken out hatched very quickly, in about 24 hours. They were the smallest fry I had ever seen, just clear little slivers clinging to everything. There were probably sixty or more eggs and I think that almost all had hatched. I waited a few days before trying to feed them. The first food was "filter grunge"; I would take a seasoned sponge filter and squeeze it into the tank. They needed very small food and this seemed to work pretty well. I later added APR and after a few weeks started with newly hatched brine shrimp. I had quite a few that seemed to be growing, but then I had to go away for a few days. When I returned there were only a handful left, but of these I

raised five up to adulthood.

We had lost one of the females shortly after the first spawn, but still had one pair left. We did have a second spawning too, about 1 month later. I was unfortunately not able to get any eggs the second time and lost both fish within a couple of weeks. I am guessing that the spawning had taken too much out of them. It was a very frenzied and an exhausting courtship. I would see them stop at times as if to catch their breath; they were definitely breathing very hard and rapidly. We had these fish for close to two years but they always had tank mates. I am guessing that they may have spawned earlier, but I just never saw any eggs as they were probably eaten as soon as

they were laid. But then again, maybe these were the only times and we just so happened to see it each time.

Note: I had carefully marked the calendar with the dates on the spawns and the egg hatching and the fry free swimming. But these spawns happened in October or November so the calendar was recycled before I was able to transfer the data to this article. The fry are now almost two years old, so I am considering removing all of their tankmates and trying to spawn these fish again, in the same tank even. I believe I have at least one pair, maybe more than that. I am not sure, as you rarely see them for very long. I might even add a few apple snails again.

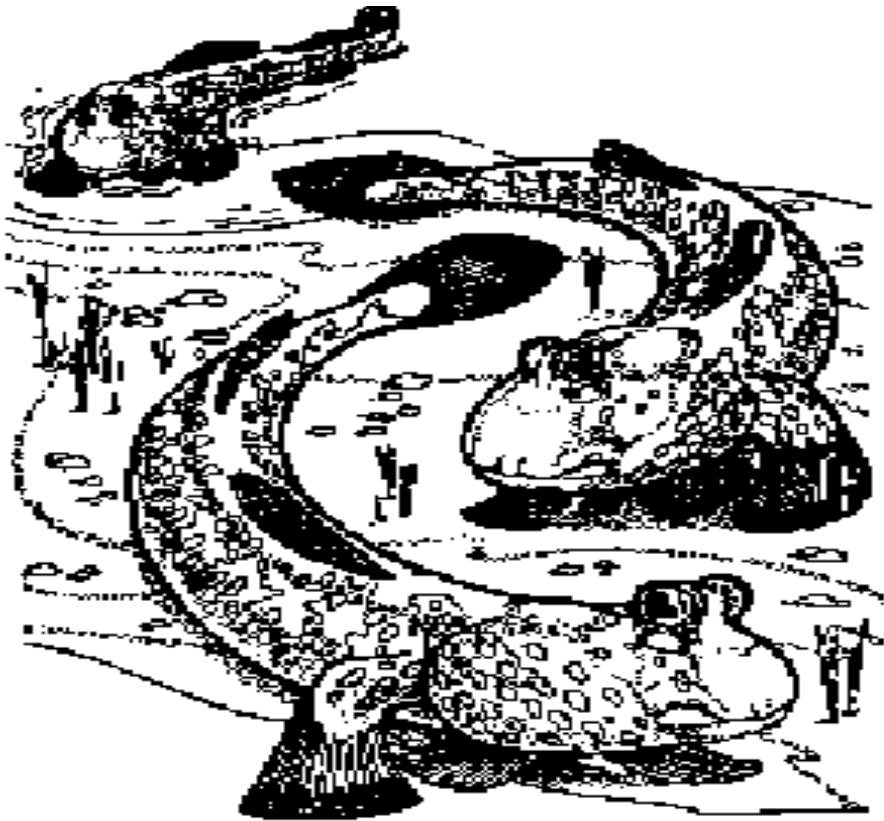


Frank Greco -

Senior Aquarist, New York Aquarium

Reprinted from *New York Tails*, A Magazine for the People and Pets of NY

MUDSKIPPERS: A Fish Out of Water and Walking!



Having been in the hobby for many years, I am always on the lookout for something unusual. Mudskippers are surely a fish that fits the description. While most fish are content to live their lives fully immersed in water, mudskippers (fishes of the genera *Periophthalmus*, *Periophthalmodon*, *Boleophthalmus*, *Scartelao*, and *Zappa*, of which the first two are commonly seen in the hobby) not only live IN water, but unlike most fish, mudskippers spend much of their life OUT of water! In nature, at high tide, you can find them at the water's surface, resting on rocks, roots or anything else they can find to perch on, usually within reach of their burrow. At low tide, mudskippers can be seen walking (yes, walking!) on mudflats, actively foraging for food.

But how do mudskippers, which are fish, walk on dry land? By using their highly modified pectoral (swimming) fins much like legs. And by flipping their bodies, they can "skip" across the mud (and water), which is a great way to avoid predators. They are poor swimmers, and will also use these fins to walk underwater (mudskippers move faster ABOVE water than BELOW it!).

Another unusual aspect of mudskippers is that they are one of the few fishes that can actually drown if held underwater. They need to be able to poke their heads above the water's surface and gulp air.

Mudskippers retain water in their large gill chamber that closes tightly when the fish is above water. This keeps the gills moist, and allows them to function. You will often see them rotate their eyes to mix the water in the gill chamber and keep the gills from sticking together, while at the same time supplying them with oxygen.

Yet another amazing fact about mudskippers is that they can actually breathe the same air that we do. They absorb oxygen through blood-rich membranes found at the back of the throat. They can also absorb air through the capillary-rich skin, providing the skin remains wet.

Mudskippers: A Fish Out of Water and Walking!

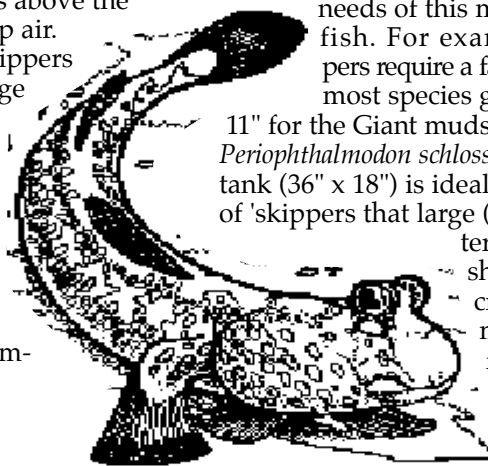
Mudskippers, usually *Periophthalmus barbarus*, the Atlantic mudskipper, are sometimes seen offered for sale in aquarium shops. However, as their needs are vastly different from those of other fishes, their lifespan can be, unfortunately, short. It behooves both the shopkeeper who sells them and the customer who would buy

them to learn about the special needs of this most unusual fish. For example, mudskippers require a fairly large tank as most species get large (about

11" for the Giant mudskipper *Periophthalmodon schlosseri*). A 50 gallon tank (36" x 18") is ideal to house a trio of 'skippers that large ('skippers can be territorial, and should not be crowded. One male to two females is advised).

For those hobbyists without a lot of room,

there are the smaller species of mudskippers, of which Pearse's mudskipper, *Periophthalmus novemradiatus*, is the most commonly imported. Reaching about 4" in length, a group of 4-6 can be housed in a 20 gallon long (30" x 12") tank. The tank should be filled half way with brackish water (brackish water is a mix of seawater and freshwater). Usually one part seawater to two parts freshwater is fine for them (using a synthetic sea salt mix, use one third the advised amount per gallon of water).




Would-be mudskipper owners also need a good filter (a canister filter is advised) as well as a tight fitting cover (being able to walk makes 'skippers GREAT escape artists!). Fine oolitic aragonite sand is perfect as a substrate as it buffers the water and provides a smooth bottom for the fish to walk on. Driftwood, rockwork, etc., some of which should be sticking above the water's surface, should then be added.

A Fish You Can Feed By Hand

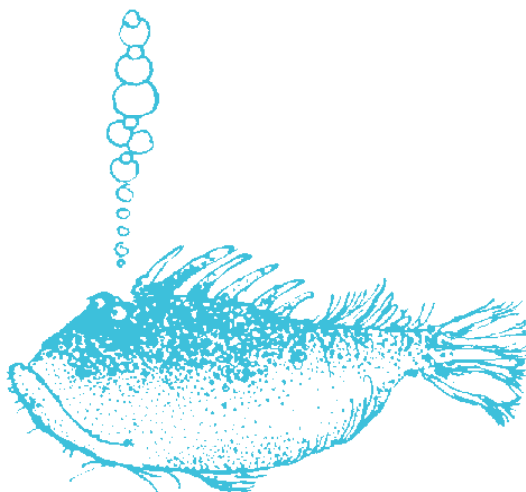
One of the most endearing traits of these unusual fish are their great personalities; in time, they will learn to take food from your hands! Foods such as frozen bloodworms, frozen krill, pellets, and even small pieces of fish and clam, are readily eaten. They have voracious appetites, so

feeding them two or three times a day is advised. As to tankmates, providing your aquarium is large enough you can add species such as the four-eyed fish (*Anableps anableps*), finger fish (*Monodactylus* sp.), and freshwater pipefish (*Doryichthys boaja*).

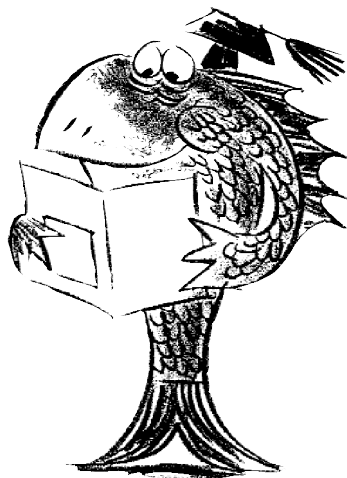
So, if you are looking for an unusual fish to keep, think of the realm betwixt land and sea, and there you will find the mudskipper! 

Have a fish question for Frank? Log on to [news://news.annexcafe.com/annexcafe.animalforum.fish](http://news.annexcafe.com/annexcafe.animalforum.fish) or email him directly at phrankg@optonline.net.

Visit his live fish chat every Sunday from 9pm to 10pm at [mic://chat.annexcafe.com/#Fish](http://chat.annexcafe.com/#Fish).



Exchange Editor's Report



Well, I got my job back. I would like to thank **Izzy** and **John** for covering for me the last few months. First thing I will have to say is I'm so lucky. I just found out that I was awarded a new title in the club. I am now one of the people in charge of the Breeders Award Program (BAP). This must be great because I don't remember putting in for it. Oh well, lucky me.

- **North Jersey Aquarium Society:**

On February 19th 2009, the NJAS held a giant memorial auction to benefit the family of long time member **John O'Malley**. John passed on and the club wanted to help out his family. I didn't know John myself, but I brought a bag of fish to help with the benefit/auction. You do what you can! For more information about the NJAS go to their web site at <http://www.njas.net/presmes.htm>

- **Delaware County Aquarium Society:**

On March 7th, 2009, the guys and gals of the DCAS will be holding their 10th annual auction at the Springfield Municipal Building 50 Powell Road, Springfield, PA. Registration is from 9 am to 11 am. For more information, you can call Marilyn at (610) 447-0786. Good luck, guys.

- **Diamond State Aquarium Society:**

volume 46 #2, **Bob Berdoulay**, a member of the DSAS, has written a

nice article on water changes under The Amateur Hour. Bob takes the time to remind us of the all so important reasons of keeping our tanks clean. Thank Bob. That reminds me, my tanks are due for a water change.

- **Bill Smith** has a nice article in the same volume on the care and breeding of a nice dwarf cichlid from Lake Tanganyika, the *Julidochromis marlieri*, I have to admit I had to look this one up. Nice looking fish. Now I have another fish to add to my wish list.

- **Blue Zoo Show with Frank Reece**

What a great show this is. As my kids call it, fishy radio. If you haven't had a chance to hear the show, fear not. All the shows are saved. Just go to <http://www.bluezooradio.com/> and enjoy. The only thing the show needs is an interview with a certain exchange editor on the advantages of belonging to one of the best Aquarium Societies in the country. 

**PLEASE PATRONIZE OUR SPONSORS. THEY SUPPORT US.
WE MUST SUPPORT THEM!**

ABSOLUTELY FISH

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

Absolutely Fish

1080 Route 46 West Clifton, NJ 07013

Ph: 1 (973) 365-0200

Open 7 days a week: Mon-Fri 12-9 Sat 12-8 Sun 12-5

ALTI@ALTISREEF.COM

Alti's Reef.com Check out Rob's web site to see what's in stock. Discounts for current BAS members. Purchase over \$125 and get a free frag, and free shipping! Guaranteed overnight delivery to most locations in continental U.S. via U.S.

Postal Service Express Mail.

alti@altisreef.com

Alti's Reef 83 Chariton Dr., East Stroudsburg, PA 8301

PET SHANTY

Pet Shanty Family owned & operated; stocks 3 rooms of freshwater fish & 1 of marine fish & corals. They stock a vast list of fish which is posted on line at <http://petshanty.com>. They also carry other pets and pet supplies. You've got to check them out; they probably have the fish or corals you want.

Pet Shanty

2507 U.S. Hwy 22, Scotch Plains, NJ 07076

Ph: 1 (908) 889-8262 • Fax: 1 (908) 889-0803

Mon-Fri: 10am-9pm • Sat: 10am-7pm •

Sun 10am-5pm

AQUARIUM ADVENTURE SUPERSTORE

Aquarium Adventure Superstore has 500 tanks of freshwater, marine fish & corals and a great selection of equipment. **Scott** has a special 50% off all fish with a 5 fish limit, and 30% off any one item, except tanks and tank kits. Not to be combined with any other offer. Discounts to BAS members with current card.

Aquarium Adventure Superstore

177 Glen Cove Road, Carle Place, NY 11514

Ph: 1 (516) 294-9699 www.aquariumadventure.com

Mon-Sat 10-9 • Sun 11-6

PETLAND DISCOUNTS

Petland Discounts the complete pet store carries a full line of pet supplies for fish, dogs, cats, birds, reptiles and small animals. They also carry a variety of fish, birds, small animals and reptiles. Open 7 days a week. Locations in New York, New Jersey & Connecticut with over 15 stores in Brooklyn. You can shop on line at: www.petlanddiscounts.com See the white pages, or their ad on page 22 for a store near you.

PACIFIC AQUARIUM & PET INC.

Pacific Aquarium & Pet Inc., in Manhattan's Chinatown, carries ornamental goldfish, koi, freshwater fish, & aquatic plants. BAS members get 10% discount with current membership card (Discounts not to be combined with other specials). They have a full line of aquarium supplies, and you can order custom size tanks.

Pacific Aquarium & Pet Inc.

46 Delancy St., NY, NY 10002 • Ph: 1 (212) 995-5895

Open 7 days a week and all holidays 10am to 7:30pm

**PLEASE PATRONIZE OUR SPONSORS. THEY SUPPORT US.
WE MUST SUPPORT THEM!**

Aquatic Express Inc.

Aquatic Express Inc., specializing in marine fish, corals & aquaria. Tell them you're a member of BAS and you will get 10% discount on corals in stock.

Aquatic Express Inc.

451 Grandview Ave., Ridgewood, NY 11385 Ph: (718) 456-3020
Mon-Fri 11am-8pm, Sat 11am-7pm, Sun: 11am-6pm

AQUATIC WILDLIFE

Aquatic Wildlife features 11,000 gallons of freshwater fish, plants & marine life. Discounts to members with current membership card. Well worth the trip.

Aquatic Wildlife,

179D Denning St., Manchester, CT 06040

(In Panera Plaza)

Ph: 1 (860) 648-1166

www.aquaticwildlifecompany.com

BROOKLYN ZOO & AQUARIUM INC.

Brooklyn Zoo & Aquarium Inc. is a classic pet shop. They have a full line of aquarium supplies, freshwater, marine fish and corals and offer a 10% discount to BAS members with presentation of a current membership card. Some restrictions apply.

Brooklyn Zoo & Aquarium Inc.

2377 Ralph, Ave., Bklyn, NY • Ph: 1 (718) 251-7389
Hrs: Sat-Sun & Mon 10am - 6pm Tue-Fri 10am - 8pm

ROYAL AQUA WORLD INC.

Royal Aqua World Inc. has over 100 tanks of marine fish, hard & soft corals, freshwater fish, goldfish & koi imported from Japan, plus plants and pond supplies. BAS members get a 10% discount on all purchases with a current membership card. Open 7 days a week.

Royal Aqua World Inc.,

815 65th St., Bklyn, NY 11220

Ph: 1 (718) 238-0918

Hrs: 7 days a week 10:30am-8pm

Wonderful World of Fish n' More

Wonderful World of Fish n' More. A full line aquarium store w/ maintenance & installation services. A beautiful retail store with over 2,500 gallons, dedicated to marine fish & corals. They take pride in offering the best customer service, competitive prices & healthy livestock.

Wonderful World of Fish n' More

25-71 Steinway St. (between 28th & 25th Ave.)

Astoria, NY 11103 • Phone: (718) 278-0708

Hrs: Mon-Fri: 12am-9pm • Sat: 11am-8pm

Sun 11am-7pm

"C" The Jungle Pet Store

"C" The Jungle Pet Store located in the heart of Brooklyn carries a full line of pet supplies, tropical fish, birds, and small animals. They also offer a 10% discount to BAS members with a current membership card. Stop in and see what new livestock has arrived.

"C" The Jungle Pet Store

247 New Lots Ave., Bklyn NY 11207

Ph: 1 (718) 649-2536

Hrs: Tue -Sat 10am-8pm • Sun 10am-6pm

DIVINE WOOD

DIVINE WOOD, "Where Elegance Becomes Affordable." Aqua wall aquariums, tables and credenza's with built in aquariums. Wall aquariums are great for displaying Bettas. Functional tables with 18 gallon aquariums built in - just add fish, plants and enjoy. Visit Dennis and see all the Liquid Beauty Creations for yourself.

Special discounts with current BAS membership card.

Dennis Alestra

Divine Wood, 128 Port Richmond Ave., Staten Island, NY. 718-981-9222.

www.divinewood.net



Educating
Aquarists
Since 1911

Membership Application Brooklyn Aquarium Society

2008/2009

Meetings are held at the NY Aquarium Education Hall on the 2nd Friday of the month at 7:30pm. Knowledgeable speakers on fish care and culture, door prizes, raffles, and fish auctions. All meetings are free to members.

Visit us on line: BROOKLYNAQUARIUMSOCIETY.ORG

NAME _____ OCCUPATION _____

ADDRESS _____ CITY _____ STATE _____ ZIP _____

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

E-mail _____

Address _____

TYPE & LENGTH of MEMBERSHIP: (CHECK ONE)

INDIVIDUAL

FAMILY

[] \$15 STUDENT 1 YEAR

(UNDER 18 YEARS)

1yr.

\$20

2yr.

\$36

3yr.

\$51

4yr.

\$68

1yr.

\$25

2yr.

\$45

3yr.

\$63

4yr.

\$85

* 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 get in touch with you if you check yes.

On occasion the Brooklyn Aquarium Society uses its mailing list to send notices of interest to our members.

If you DO NOT wish to receive these mailings please check here []

Official use

Member number: _____

Type of membership [F] [I] [S]

Date paid: _____

Board approved date _____

Amount paid: _____

Renewal/member since _____

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