

THE DELTA TALE

Potomac Valley Aquarium Society Official Publication

Volume 35, Number 3



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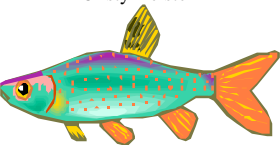
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Cover Photo: Wild Discus from the Amazonia Exhibit at the National Zoo, (fresh water ray in the background). By Sherry Mitchell.

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Editors Tank:

Greetings from your president. Unfortunately, your Delta Tale Editor, Paul Lord got called away to Atlanta to help in the reclamation effort for those who suffered from the recent floods. He also may soon be sent to Samoa where a recent tsunami caused devastation as well. Our best wishes go out to Paul as he covers the globe helping in the relief of those who have suffered from the ravages of Mother Nature!

In the meantime, I have stepped in to assist in the layout and design of the magazine this season. It’s an exciting fall issue with a host of interesting topics, and a few picture surprises thrown in. Author, BAP chairman, and fellow fish fanatic, JT Thomas gives us two articles that detail his breeding whiptails and cories. Frank Cowherd also weighs in with tips on how to survive a power outage, and yours truly has a piece on the art of breeding gouramis all the wrong ways, among many other special features.

Folks, Delta Tale needs articles, photos, drawings, and anything you think might be of interest in the magazine. Please submit all material to: plord@verizon.net. Remember it’s “publish or perish”.

Let’s remember to keep those who are less fortunate in our prayers, as well as Paul Lord who is out there like a super hero helping to clean up the planet and help those in need. Paul I hope you get back home quickly and safely, and return to club meetings soon. You are missed!

~ Sherry Mitchell

The Four Stages of the Aquarium Hobby

by Albert H. Klee, Ph.D.

When did the aquarium hobby start? Who “invented” the aquarium? What do we mean when we say the “aquarium hobby” or, for that matter, the “aquarium”? These questions have presented difficulties for hobby historians precisely because there are no universally agreed-upon definitions. Trying to pin down a concise explanation of the meaning of a word or a term sometimes is - to paraphrase a remark of my grandmother’s - akin to attempting to estimate the number of angels that can dance on the head of a pin. Even if we were to agree on these definitions (and bear in mind the line from Lewis Carroll’s *Through the Looking-Glass and What Alice Found There*: “**When I use a word,**” Humpty Dumpty said, in rather a scornful tone, “**it means just what I choose it to mean—neither more nor less.**”) There is no guarantee that this will take us any “forwarder” on our quest to elucidate the hobby. It also should be recognized that, in defining an object, the definition then limits the object, and this may have unforeseen consequences.

One way out of this dilemma is to avoid definitions and instead describe the

major stages in the development of the aquarium hobby.

THE FOUR STAGES OF THE
AQUARIUM HOBBY

STAGE I:

THE TOP-DOWN AQUARIUM
(circa 4000 BC)
Opaque-sided containers.

STAGE II:

THROUGH A GLASS CLEARLY
(late 1530's)
Glass jars: fish kept for ornamental or scientific study purposes.

STAGE III:

OCEAN AND LAKE IN GLASS
(mid 1800's)
Tanks frequently with flat glass sides; aquarium books; commercial aquarium fish and equipment suppliers; object to emulate a small portion of a natural habitat.

STAGE IV:

ASSOCIATION (circa 1900)
Aquarium societies; exhibitions; competitions; aquarium magazines.

The first stage clearly started when people began to keep fish for their



**Example of a STAGE I Aquarium,
i.e., a goldfish pond.**

ornamental and entertainment value in ponds and in indoor containers, e.g., goldfish by the Chinese a thousand years ago, and the piscina (from *piscis*, a fish, fish-pond, pool or basin – the term later took on different meanings) of the Romans. One can argue that these ponds and indoor containers were not aquariums in the technical sense since, although the owner of any respectable Roman villa could look down upon the animals in his fishpond, they could only be viewed from above through the opacity of rippled water. The same held for the in- door containers of the time since they, too, were opaque-sided.

STAGE I of the aquarium hobby, therefore, is what I term **“The Top-**

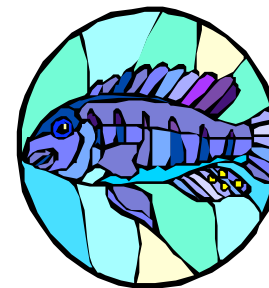
Down Aquarium,” exemplified by these ancient, opaque-sided, outdoor and indoor aquariums that were viewed from above, although obviously STAGE I aquaria are still common today. I use the term “aquarium” accurately here, as originally it was nothing more than a reservoir or large vessel holding water without any specification as to the uses to which that water was applied.

STAGE II is what I term **“Through a Glass Clearly,”** i.e., any container of glass or other transparent medium that affords the viewing of a fish in the more direct, edge-on, eye-to-eye orientation. Since the Romans produced glass bottles and other glass containers, it might be supposed that they were used to house some of their fishes and thus were the first STAGE II aquarists. Not only is there is no evidence for this, it is highly unlikely since their fishes were rather large for such containers. The Romans, however, did maintain fish hatcheries and may have used glass jars to temporarily house the fertilized eggs of fishes destined to be introduced into waters where they were expected to reproduce and provide a source of food. Again, however, there is no evidence that they did so.

There has always been a great deal of speculation as to who was the first to keep a fish in a glass container. The Romans began to use glass for

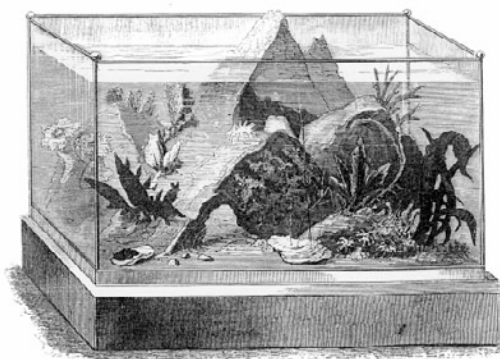
architectural purposes, with the discovery of clear glass (through the introduction of manganese oxide) in Alexandria around the First Century AD, although it was very expensive. Well-to-do Romans replaced one wall of their marble piscina with clear glass (albeit with poor optical qualities), arguably resulting in the very first aquarium in the sense that we define the term today. However, it was during the second half of the 15th Century that a material known as “Crystallo” was perfected in Venice. This was the beginning of the clear, almost transparent product we normally associate with the word “glass” today. Therefore, whether the Romans should be credited for the first glass-fronted aquarium is open to debate.

The first Stage II fish keeper of record was Jeanne Rondelet, who kept a fish alive in a glass of water for three years sometime in the late 1530’s or early 1540’s. In the mid to late 1700’s, the keeping of fish in glass containers became fashionable in Great Britain and included such illustrious personages as Horace Walpole, the 4th Earl of Oxford.



**The Stage II Aquarium.
Cats and goldfish bowls are almost a
cliché in the aquarium hobby.**

What the aquarium craze of the mid 1850’s in Britain did was to bring on STAGE III of the aquarium hobby, i.e., what I term **“The Ocean and Lake in Glass.”** This stage is characterized by the following: (1) first, and most important, the interpretation of the aquarium as a mini-representation of a small portion of some natural aquatic environment - the marine aquaria of the day, for example, were frequently referred to as “parlour oceans,” (2) an availability of books on the subject, and (3) the existence of commercial establishments supplying fish and equipment.



A Stage III Saltwater tank circa 1857.

Towards the end of the 19th Century, improved printing, cheaper mails, and telephone service put people in quick touch with what was going on. It was the age of the periodical and in the aquarium hobby it started with the publication of Mulertt's THE AQUARIUM in the late 1870's and into the 1890's. Tropical fishes were being imported for the first time, starting with the Paradise Fish in 1876, and the others that followed shortly after the introduction of the Chanchito in 1895. In the 1890's, aquarium societies appeared on the scene as well as new authors such as Ernst Bade, Gregory Bateman, Charles Page, and Mark Samuel, ushering in the last stage of the aquarium hobby as we know it today, i.e., STAGE IV, "Association," the notion of aquarium societies, exhibitions, and competitions, all strengthened by improved communication through the appearance of the first aquarium magazines, improve-

ments in travel, and the changing nature of cities.

It should be noted that each successive Stage coexisted with previous ones and therefore one can find all four Stages today in various manifestations. Members of the Aquarium Hobby Historical Society are examples of Stage IV aquarists. Although it has been said that the aquarium hobby is the world's largest, since most present day fish keepers simply maintain their tanks for decorative purposes, a source of relaxation, a conversation piece, a learning tool, or teaching responsibility (especially for children), they more accurately may be characterized as Stage III aquarists.



An Early Stage IV Aquarium Publication

~ First Aquariums ~



Featured is a Marineland Eclipse, Twelve Gallon Tank, bought for Sherry Mitchell's son, Sean on his tenth birthday in 1999. The tank was originally set up with danios, tetras and plastic plants. Today the tank houses an electric blue crayfish at Sean's college apartment, and is still going strong.



Where There's a Whiptail, There's a Way

Spawning Rineloricaria eigenmanni

By J.T. Thomas, All Images by:

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I saw my first whiptail cat in a fairly crappy pet store about a year or a year and a half ago. Sitting immobile on the bottom of the tank it looked to me like some sort of Cardassian spacecraft. They're not pretty, these fish, but there are not many fish that have a more interesting look to them, and they are not the usual aquarium fare. And this is good, for they turn out to be fairly easy to breed.

Whiptail Catfish are widespread throughout South America, with approximately 30 species (according to Wikipedia) in a wide variety of habitats. I was able to procure a breeding trio of Rineloricaria eigenmanni from a local breeder. These are a very common species in the Columbian and Venezuelan llanos, and are usually found in clear whitewaters. Such areas are characterized by rounded rocks, a sand bottom, driftwood, and leaf litter. In streams there would be a fair current, and so this is what I kept in mind in setting up the tank. In order to facilitate spawning, I was advised to put a number of 6 to 8" lengths of 1.5" diameter PVC tubing open at both ends (bamboo works too, I have read.)



Rineloricaria are peaceful and adaptable. Temperature range is 75 to 84, pretty typical of tropical species, and they thrive in pH 6.0 to 7.4, also pretty typical. They are non-territorial and, "will not harm even the smallest fry¹." And they are omnivores, eating both vegetation and meaty food items that fall to the bottom of the tank.

Now, on the chance that one cannot obtain proven breeders, they turn out to be quite easy to sex. The head of the male is more rounded than that of the female, and mature males in breeding condition have a beard of fine bristles on the side of the head (odontodes). There is an excellent picture of a male and female side by side on PlanetCatfish.com, in the CatELog entry for *R. eigenmanni*. (Pictures 13 & 14), that clearly shows the difference in head shape and the odontodes on the male.

The Tanks

I set up my breeding trio in a 20 long. Over an inch thick substrate of fine sand, I placed smallish rounded stones, boiled oak leaves, and some local driftwood (also boiled). The driftwood was held down with a slab of granite until waterlogged, then the granite was set upright to direct the current from the filter.

Filtration is an Emperor 400, turning over the tank volume 20 times hourly. In retrospect, I cannot recommend this technique in a shallow tank with a sand bottom. In the future, I would use air driven box or sponge filters and powerheads to agitate the surface and keep the water moving.

Initially lighting was provided by a single bulb 30" strip light, though now the tank shares a dual bulb 48" shoplight with a pair of 10 gallon tanks. A 75 watt heater was set to keep the tank at 78°F. I used my typical water, which is fairly hard Fairfax county ordinary, with a pH crash brought on by liberal use of AmQuel+ and NovAqua+ in pond concentrations. This brings general hardness down into the single digits (leaving a bit of carbonate) and brings the PH down to just south of Neutral (about 6.8). Of course, the Oak leaves depressed this further.

For breeding real estate I put in two 6 to 8" lengths of 1.5" PVC pipe.

Into this, I introduced my three whiptails, a shoal of 6 *Corydoras metae*, and a shoal of 6 Gold tetras (4 of which were certainly *Hemigrammus rodwayi*, and 2 of which may have been something else.) Somewhere along the line, breeding populations of pond and ramshorn snails made it into the tank as well. And here's what it looked like:



Not a particularly attractive tank, but a pretty fair biotope. Since this was in my living room, I tinkered with it several times to improve the look of it.



I used fishing line to wrap one tube in Java Moss and the other with a bit of java moss and several small java ferns.

Over time, as the Oak leaves decomposed, I started adding Java Moss to

replace them, and it currently carpets about a third of the tank. (I will be collecting oak leaves to cover another third the next time I have the chance.) Apparently, the *C. metae* like to spawn in leaf litter. Also, I have so arranged the granite and the tubes so as to direct a goodly amount of the filter output right down the breeding tubes.



After the first spawn, I removed the gold tetras. Also, I have been removing any *Corydoras* fry about every 2 months.

Conditioning the Breeders

I treat my fish pretty well when I have time, so every evening, into the tank would go 2 or 3 spirulina tablets and a couple of different types of food: a rotation of 3 days dry, 2 days frozen, 1 day live, and 1 day nothing in each week. Dry foods included 3 kinds of flake, 3 kinds of pellets, freeze dried bloodworms or tubifex, and (once I detected cory fry) cyclopeze powder. Frozen is Bloodworms, Spirulina brine, Daphnia, freshwater frenzy, or mysis shrimp, typically half of a cube. Live food is blackworms and brine.

Over the month prior to breeding, I did a 30% water change weekly, using treated, aged water.

The First Spawn

A cursory glance at the initially set of the tank will let the wise discern that getting a view down the breeding tubes was less than totally convenient. Therefore, when I discovered the male sitting on a clutch of eggs on Christmas morning '08, I could not be sure how long they had been there. There were perhaps 60 eggs, perhaps more, all of a jade green color, quite large as eggs go for fish I have spawned, in excess of 3mm in diameter. I can no longer find the basis for my belief that it would take 11 to 14 days for them to hatch, breeding summaries of whiptails being thin on the ground, but I had found this information somewhere, and planned on moving the tube, male, eggs, and all to a 10 gallon tank on 5th or 6th of January (so at 11 or 12 days). This is where it is important to know when the spawn actually happened. As when I put the 10 gallon down preparatory to siphoning off water from the 20 to fill it, I noticed 3 tiny whiptails, 5 or 6 mm long, duplicates of the parents in all but size, collected near the waterline. Unfortunately, those three and perhaps a half dozen others were all I was ever able to find of that first hatch. The tube on the morning of the sixth was clean of all eggs, and the male had retreated to a hiding place in the leaves, having, presumably, jumped the gun and

eaten the balance of the eggs, or abandoned them to be eaten by his cohabitants.

Given that the females had already taken on the appearance that they had swallowed half a cocktail olive, I assumed I would not have long to wait to take another shot at getting this right...

The Second Spawn

...And nor was I mistaken. When I checked the tube in front of the filter on Sunday the 11th of January, preparatory to doing a water change, there was the male, doing what were essentially push-ups with his pectoral fins over another clutch, about the same size as the first one. Expecting a 10 to 12 days of waiting until the hatch, the very next weekend, January 18th, I set up a 10 gallon tank to hatch the eggs in (and to give the male a chance to bulk up a bit before going back into the main tank – he doesn't eat while he's guarding eggs, and a lusty pair of fecund females can drive him to starvation. He's like a college boy that way.) This was filtered with an air driven hydrosponge 1, filled with water from the 20 gallon, bare bottomed, and heated with a 50 watt hang on heater. Using a half gallon specimen container, I moved the tube, male, eggs, and all, into the 10 gallon, then tossed in a goodly wad of java moss for infusoria production (infested with snails as it was) for between meal snacking for the impending fry. I also put in the three fry that had survived from the first spawn, as well as a half dozen Corydoras metae fry. I began

by feeding the janitorial staff a small portion of cyclopeze each morning and a fragment of a spirulina tablet and a bit of frozen baby brine/frozen rotifer mix each evening.

The eggs hatched on the 19th and 20th, and I soon had 5 dozen or so baby whiptails hanging like so many miniature, superattenuated bats near the waterline by the sponge filter.



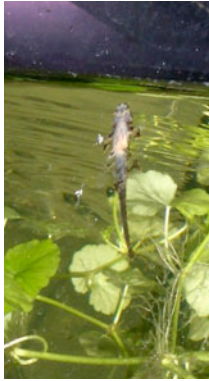
ProTip: The babies need a high oxygen content in the water. Aerate the tank well.

I upped the feeding amount slightly, except for putting in a whole algae tablet nightly for the male's gustatory restoration. I returned him and the spawning tube to the main tank on the first of February, not quite 2 weeks later.



Raising the Fry

?



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Everything you are likely to read about raising whiptails will tell you that the hard part is not getting them to spawn, but raising the fry. With a twice daily regimen of cyclopeze powder and microworms, or a

2:1 mix of frozen baby brine and frozen rotifers, coupled to a daily spirulina tablet, I was able to keep my losses down to 1 or 2 weekly. After about 2 weeks in the 10 gallon tank, I set up a 25 gallon tank thus: Bare bottomed, a stick of native driftwood from another tank and two small hunks of granite as aufwuchs growth encouragement. To this I added enough java moss to just about half cover the bottom of the tank (all of the moss from the 10 plus about half as much from other tanks) and enough Brazilian pennywort to ¾ cover the surface. I added a second sponge filter and switched out to a 75 watt submersible heater. I also removed the cories at that time.



At about 3 weeks I removed the rotifers from the mix, and at about 5 weeks I added daphnia and upped the ration of spirulina tablets to 2. At about 6 weeks, I moved the tank into the new fishroom stand and added my 4 female guppies and a cloud of their fry to it. From there on, I fed flake or small frozen food twice daily, and 2 to 3 spirulina tablets or a half sheet of plain sushi-nori each night. By about 6 weeks, the loss rate had dropped to 1 weekly. I never lost one that was longer than an inch and a half.

Water changes were done directly from the spawning tank. I'd squeeze the filters twice, remove all the plants and décor to a bucket with tank water (so as to not lose any fry hiding in them), and then siphon as much detritus off the bare bottom as feasible, before removing about 8 gallons (in total) of the water. I'd then replace the water in the main tank with conditioned and aged water at room temperature so as to drop the tank temperature into the low 70s to stimulate the cories to breed.

Ultimately, I was able to bring about 3 dozen baby whiptails, ranging from 2 to nearly 3 inches long to auction in late April.

Conclusions

Spawning Whiptail cats is really not all that difficult. Given a male and one or more females, the proper housing for the male to guard the eggs, a sand bottom, and plenty of varied foods, they will

spawn. Raising the fry is a bit challenging, but with good hygiene and water changes and plenty of small, protein rich food paired with a good source of vegetation, there's no reason to be alarmed by the occasional death: most will survive.



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<http://www.cafepress.com/PVAS>

~ August PVAS Pics ~



David Snell auctions while Mark Harnet shows off the goods.



May, Larry W. and Larry T. at the recording desk during the auction.



Robert and David working the crowd!



Sherry Mitchell and Speaker, Marc Weiss.

BAP Report June 2009

by J. T. Thomas, BAP Chairman

Standings:

Name	Level	Points	Pending
JT Thomas	Breeder	80	80
Gerry Hoffman	---	30	60
Jen Williams	---	20	20
Sherry Mitchell	---	20	-
Susan Findely	---	10	-
Robert Peterson	---	-	50
Rick & Mary Dotson	---	-	25
Dennis O'Conner	---	-	10
Cecilia Allman & Ron Leftwich	---	-	10

23 Species Spawned in the program:

Convict (Amatitlania nigrofasciata), Albino Bristlenose (Ancistrus sp.), Cockatoo Dwarf Cichlid (A. cacatuoides), Betta (Betta splendens), Salvini Cichlid (Cichlasoma salvini), Bronze Cory (Corydoras aeneus), Bandit Cory (C. metae), Sterba's Cory (C. sterbae), Gold Gardneri (Fundulopanchax gardneri), Jewel cichlid (Hemichromis guttatus), Least Killifish (Heterandria formosa), Labeotropheus trewavasae, Festivum (Mesonauta insignis), Guppy (Poecilia reticulata), Sailfin Molly (P. velifera), Endler's Livebearer (P. wingei), Angelfish (Pterophyllum scalare), Common Whiptail (Rineloricaria eigenmanni), Firemouth (Thorichthys meeki), Red Tailed Goodeid (Xenotoca eiseni), Platy (Xiphophorus maculatus), Swordtail (X. helleri)

Doing Three-Spot Gouramis the Wrong Way

by Sherry Mitchell
All Photos by: Sherry Mitchell

It all began with a bag of blue three-spot gouramis at the PVAS monthly auction. I knew I wanted to try to breed gouramis, but I had been enamored of the beautiful dwarf gouramis, not the three-spots. I had succeeded in getting a pair of dwarfs from the local fish store, but they died before I was able to get them to breed. News from the fish world has reported on the lack of vigor in dwarf gouramis as well as the scarcity of female dwarf gouramis on the market.

Shortly after the dwarfs gave up the ghost, I found a pair of Blue Three-Spot Gouramis at the monthly mini-auction and bought them. They went in their own heavily planted 20 long in the fish room. The tank is planted with java ferns and an assortment of other plants in a substrate of Eco-Complete, my favorite substrate. There is a chunk of driftwood in the tank and they spent a great deal of time hiding behind it until they discovered I was the source of delicious live food. Also, there was a thick coating of red-root floater at the tank surface. I kept it there to

encourage the male to build a bubble nest. The tank was filtered with a Whisper in-tank filter which disturbed the water very little. The far corner barely rippled and the male liked to hang out there a lot.



I watched and waited and nothing happened. I fed the pair live black worms every other day, which they devoured. On the off days I fed them flake food, frozen bloodworms, and live brine shrimp. The female fattened up and the male chased her occasionally, but I saw no bubble nest and no young.

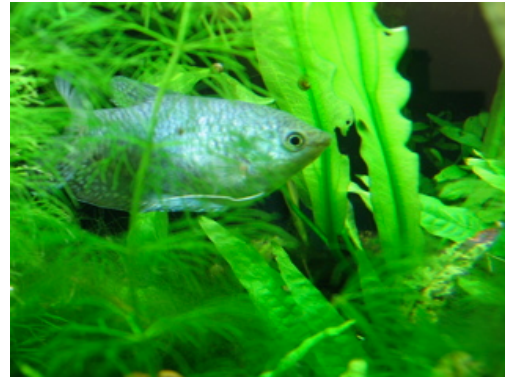
I posted questions on the PVAS forum, asked everyone I could think of at meetings, and listened to varying tidbits of advice. I was told to gather rain water for the tank to make the water softer, lower the water level of the tank, jack the heat up to 84 degrees, remove the filter, separate

the female in a jar so the male could see her but not get to her, and a host of other things. Being lazy, I did the easiest thing and jacked the heat up to 83 degrees and waited expectantly. Still there was nothing.

Knowing that my water was on the hard side and that my pH was high I asked Dave at Centreville Aquarium (my local fish store) what I was doing wrong. Knowing that I'm such a clean freak about my tanks, he told me to stop doing the weekly water changes and see if the dirtier water would do the trick, and also to try a bag of peat in the filter chamber. I bought a box of pelleted peat, put it in a nylon bag and stopped cleaning the tank so thoroughly, and guess what.....Nothing happened.

I started to think it would be impossible to raise soft water loving fish in my hard, well-buffered, high pH water and made a note to sell the fish in the next mini-auction. I was ready to try my hand at another type of fish. I knew I could breed some fish. The guppies were certainly going like gang busters and the goldfish bred like rabbits in the pond, so I knew it wasn't me. I even entertained thoughts of switching to all cichlids in the tanks and began to explore Tanganyikan cichlids. It was clear that the pair of gourami's had to go if they were not

going to do what nature intended them to do. I made plans to bag them and take them to the next PVAS meeting.



The beautiful blue color of the gourami shows up very well when they are breeding.

On the day of the meeting, I was sitting in my fish room at 5:00 AM, before school, and I looked up at the tank. I saw a cloud of dust in the tank and went over for a closer inspection. The male was guarding a bubble nest and there were several fry swimming under the nest! I was elated. The fry were the smallest thing I had ever seen and I marveled at their size compared to their parents. It was late and I needed to get to work, so I left that batch of fry hoping they would be all right. Unfortunately, they were gone by the time I got home from work. I was disappointed but hopeful that the curse had been broken. I immedi-ately set about conditioning

the parents again, did a water change and renewed the peat in the filter.

Months went by. The male colored up to the most beautiful blue color I'd ever seen on a freshwater tropical fish. Spots of pale blue and white appeared along his belly and upper fins and he paraded around the tank like the king of his castle. He lorded it over the poor female, but never attacked her, so I let her stay. Then one night I forgot and left the light on in the storage room



Bubble Nest at the top of the tank.

adjacent to the gourami tank. A day or so later, I noticed hundreds of flecks swimming at the surface. I thought perhaps the "moonlight" of that storage room light had put the parents in the mood. The fry swarmed around the male as he tenderly took them in his mouth and spit them at the surface of the water. The male chased the female away every time she came near. I was afraid she would eat the babies, so I put a tank divider in the tank that evening.

The tank divider didn't work. The next morning I found the female on the same side with the male. She had been nipped pretty badly on her stomach and lower fins, so I netted her out to a recuperation tank. The number of fry had been reduced, but I was still hopeful that I could have at least a few dozen for a BAP report.

After the third day I netted the male out of the tank and set about trying to save as many fry as I could. I had no live food, just "First Bites" by Hikari which I ground to a fine powder. I fed them several times a day, but each day there were fewer and fewer fry. I finally figured out how to hatch my first batch of brine shrimp and the remaining babies devoured them.



Gouami fry among their dinner of live baby brine shrimp.

My life became a series of feeding the fry and making new batches of

brine shrimp. I had two brine shrimp hatcheries going in old pasta jars and was managing to make a batch every 24 hours, but it was too little too late. By the time I got my live food production in hand I was down to six fry -- too few for a BAP report.



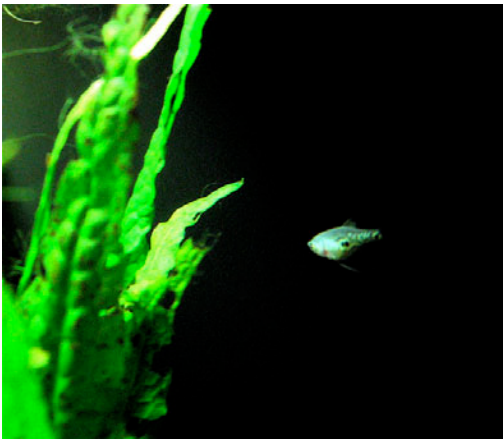
Gourami Male and three day old fry.

Of the remaining six, one was not right. It jerked through the water, didn't grow like the rest and seemed to have trouble from a very early age. A friend who is an experienced fish-keeper advised me to cull that one. So, with some difficulty the little runt got fed to the resident Convict Cichlid. I felt like a murderer, but knew it was the right thing to do. The little mite would have never been normal and I couldn't bare to see it struggle. In the wild it would surely have been picked off.

The five fry that remained hung in there. They developed their "feelers"

when they were about four weeks old and used them like brakes as they scooted across the tank. Feelers up against the body made them go fast, feelers down stopped them. At that stage they guzzled live baby brine shrimp hatchlings, then graduated to micro pellets when they were about six weeks old.

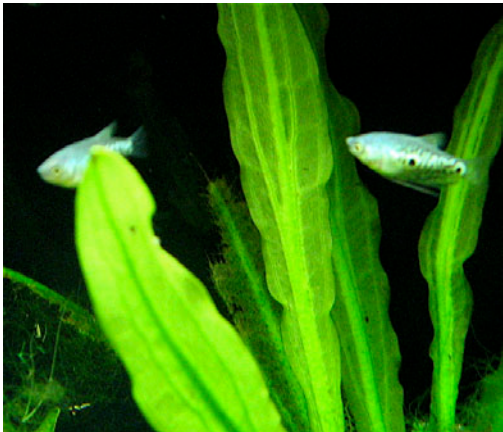
At eight weeks they were started on small live black worms, and live adult brine shrimp which they ate with gusto. Every other day they were fed Hikari Micro-pellets, shrimp pellets, and flake food once they were three months old.



A ½ inch baby gourami moves through the tank.

I made many mistakes with those five, but nature and their will to live pulled them through. I have been impressed with their ability to survive. They

truly are survivors and in this case, where I did everything wrong, it really was survival of the fittest!



Blue Spot Gourami Fry among plants.

A Generous Donation From Stan Weitzman

Recently, PVAS received the following email from honorary lifetime member, Stan Weitzman:

I have a previously unpublished drawing in color of Nannostomus rubrocaudatus. This species of Nannostomus was recently (2009) described as a new species of Nannostomus by Axel Zarske, who had lots of fresh and preserved specimens of this species. Axel Zarske is stationed at the Museum für Tierkunde, Dresden, Germany. Many years ago I had Tamara Clark make a color illustration of this species but I only had three specimens of this species and was reluctant

to describe it as a new species from this few specimens.

I never got any more specimens, but Axel Zarske of the Museum für Tierkunde, Dresden recently obtained many specimens and published (May 15, 2009)a fine description in German, with several color illustrations of that species and of Nannostomus mortenthaleri.



This species differs well from the previously described species Nannostomus mortenthaleri described by Paepke & Arendt in 2001. N. mortenthaleri is available in the US as an aquarum fish from time to time (I have a breeding colony in a 60 gallon tank at home of M. mortenthalerier). If you are interested in publishing an illustration of Nannostomus rubrocaudatus I may be able to also send via e-mail an attached comparable color illustration of N. mortenthaleri for direct comparison.



These illustrations would have to be sent separately via e-mail from this message and from each other because they are too large for our Smithsonian Institution to be included with any text. In any case if you are interested I'll see what I can do in sending these illustrations to you.

Sincerely,

Dr. Stanley H. Weitzman, Research Scientist Emeritus Division of Fishes, Dept. of Vertebrate Zoology Smithsonian Institution, Washington DC 20560



These beautiful illustrations will be matted and framed and will be available at a silent auction at Aquafest! Be sure to register at:

www.aquafest2009.org

AQUAFEST INFORMATION:

Registration Fee: Only \$15!

Required for admission to all activities except Fish Show and Auction

Saturday Lunch: \$13. Make-it-yourself Taco Bar.

Banquet: \$20. Buffet style: Roast Beef au jus, Lasagna or Ziti, Salad Bar, Rolls and Butter, and Mixed Vegetables.

Sunday Pizza Fest: \$10. During auction (approximately 12:30 pm). There will be NO lunch break during the Auction.

The Registration Desk will be open during the convention on Friday 6:00pm - 10:00pm, and Saturday 8:00am - noon.

Deadlines:

Mail in payments must be postmarked by October 2nd. Do not mail reservations after that date.

No reservations for meals via Paypal will be accepted after October 12th, except for the Sunday Auction Pizza Fest. The deadline for reservations for the Pizza Fest is Thursday, October 15th.

Paypal payments for Registration Fee only will be accepted until Thursday, October 15th.

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~ SEPTEMBER PVAS PICS! ~



Lady Fishkeeper & club Prez, Sherry Mitchell.



The Cowherd's know how to work that raffle!



Gerry is such a fast auctioneer, everything around him is just a blur.



Jen finally got GWAPA Prez, Kris W. to come to a meet.



Bob Bock talked about collecting in Florida.



The auction goods table had over 120 items!

TIPS FOR YOUR FISH ROOM

HOW TO SURVIVE A POWER OUTAGE

By Frank Cowherd, September 5, 2009
(photographs by: Sherry Mitchell)

I do not know about you, but when the power goes out, I start to worry about my fish. Will the power be out long enough to be a factor? When it first goes out, you never know when it will come back on. Normally it is back on in a few minutes, and I give a sigh of relief. I am all psyched up to do something to save the fish, so when the lights do come back on, I can relax again.

When people are lost at sea or in the wilderness, there are three concerns. These are food, water, and shelter. The priority of one over the other depends on what the weather conditions are. Any one of these things can be the critical one that determines survival. If the weather is extreme, then shelter from the elements is paramount. You must remain warm in cold water or your body heat is sucked away. If it is extremely hot, you need to be inactive, you need to sweat, which means you need to drink lots of fluids, and you need to be inactive, yes, that means lie around doing nothing. If the temperature is mild, the limiting factor is water, not food. You cannot live long without water, but you can live for an

extended period without food. You will note that in this discussion of human survival there is no mention made of oxygen. Oxygen is 20% of the air we breathe and for the most part any emergency situations in which we find ourselves does not change the amount of oxygen available to us. This is not the case for fish in an aquarium.



An emergency situation for a fish, your fish in particular, during a power outage never involves the lack of water. In fact, too much water is usually the cause of the loss of your fish. Two things happen to an aquarium, no matter what size, when the power goes off. The machines that keep the water moving stop, and the heater no longer produces heat. These machines mechanically pump water or pump air that then causes the water to circulate in the tank. Their secondary function is often to pump or suck the water through a filter in order to clean the water. But filtration is not a critical function in an unexpected power outage. The critical function of these machines is to bring water to the air-water interface so that the water can become saturated with oxygen and additionally to

get that oxygenated air back down to the bottom of the aquarium.



What happens to the oxygen content in the aquarium when the power is off? The water quits moving. The water at the bottom where the fish are becomes depleted in oxygen because the fish and the decaying matter in the substrate consume it. This depletion of oxygen might happen in just a few hours, but how rapidly the oxygen is lost depends on the number of fish and how clean the tank is. Only the top couple of inches of water will have sufficient oxygen for the fish to survive when the power is off. And the fish will tell you that this is happening because they will be at the top sucking air if there is not sufficient oxygen at lower levels.. Those fish that can supplement their oxygen intake by getting a gulp of air at the surface, like corydoras, anabantids, ancistrus, etc., will survive quite well under these conditions. But those that cannot gulp air can be under real stress.

If the power comes back on in a few hours, likely you will not loose any of the fish. But you need to be prepared if the outage lasts longer.

Without agitation for a few hours only the top couple of inches of water in the tank will have any oxygen and it might not be sufficient for the fish. That is why you find them sucking oxygen from the surface. So lower the water level in the tank until it only contains one or two inches of water. The movement of the fish in this shallow water helps increase the oxygen content. The fish are providing the agitation of the water whenever they move.

During an extended power outage lowering the water level to a few inches is better than not lowering the water. But because the substrate in the tank contains decaying material which demands oxygen, you are better off catching the fish and putting them



in an empty container, like a five-gallon bucket, an empty aquarium or a child's

wading pool with only enough water to allow the fish to swim upright. And it's best to use the water from the tank they were in since that is what they are used to. If you transfer the water by spraying it from the end of the siphon tube, it will pick up sufficient oxygen. In this shallow water, the movements of the fish will cause the water to circulate so it can pick up more oxygen from the water surface. The fish can survive under these shallow-water conditions for more than two days, maybe even a week or more, unless they are really crowded or not in full health to start with. I have kept 20 quarter-sized angelfish in a gallon of water in a five-gallon bucket for a day without any problems. Fewer fish could be kept in a similar situation longer.



Check your fish in this emergency container. If you see a lot of droppings or debris, do a water change with water from the tank they were in or with fresh conditioned water if you have it available.

Again use the siphon and spray the water to get the oxygen to its maximum level.



The tank the fish used to be in will be fine without the fish and will be ready for the fish in a couple hours after the agitation is back on. However, if you have a lot of plants in the tank, you might consider lowering the water level so the plants get more oxygen. Yes, plants need and consume oxygen at night. Plants only produce oxygen when they get sufficient light. If you are still worried about your plants, remember that plants can survive for days in a closed plastic bag with only enough water to prevent the plants from drying out.

You can put a few plants in with the fish in the shallow water container to give the fish someplace to hide, but do not put a lot of plants in with the fish because the plants also need oxygen.

Now that you have provided the fish with sufficient oxygen for survival by putting them in shallow water in a bare

tank, do not mess it up by feeding them. They will survive for more than a week without any food. The right temperature is another thing.



If the weather is mild, the water temperature will not change much and the fish will be fine for many days. But if it is hot, monitor the temperature. If it gets above 85 or 90, or a higher temperature they should not be subjected to, add a bag of ice. Leave the ice in the plastic bag. A zip-lock bag or plastic bottle with screw top with a few ice cubes should be sufficient. On the other hand if the weather is really cold and the house is cooling down, heat some water on a camp stove, put it in the screw top plastic bottle or your old hot-water bottle and put it in the tank. Do not make it too hot. Use the Goldie Locks rule, not too hot or too cold, but just right.

And another possibility, if the fish are in five-gallon buckets or 10-gallon tanks, they are quite easy to move. Take

them to a friend's home that has electricity and also the right temperature. Add an air stone/air pump for insurance and relax until the power comes back on.

A generator will work too, but you have to run it all the time to keep the pump running and the heater working. You can run the generator for two hours on and then a couple hours off. How long the tank can be left without the pumps working can be determined by observation of the fish.


You can also get an inverter and a couple of marine deep cycle batteries to keep the pumps and the heater running. This is a better option than a generator in my opinion, but like the generator, you have to keep them in operational condition year around. Otherwise, when you actually need them the batteries may be dead or the generator will not start maybe because the gas has deteriorated. One battery should be good for about 12 hours, but it really depends on how much equipment you are running. Costs for an inverter and batteries can be less than a generator.

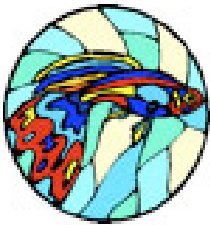
Fortunately, in the six years I have been here (Southern Maryland) there was only one time we were without electricity for more than 2 days. And that time was related to snow. Hurricane Isabel, which did produce many downed trees and flooded roads, only caused a short power outage for us. Neighbors with chain saws are a real benefit around here. They

allowed the power crews to get in and restore power quickly.



And a disclaimer on the use of five gallon buckets or 10 gallon tanks, if you have really big fish like Oscars or other large cichlids, a child's wadding pool is an option. These will hold 50 gallons of water and be about 5 to 6 inches deep. They will keep the large fish alive for many days without an air pump or mechanical pump as long as the temperature is right. But you might have to cover the pool with a screen or net to keep the fish from jumping out. And do not place it where it can get direct sunlight for more than a couple of hours, as that can cause the temperature to get too high.

With a bit of thought and planning you can get your fish through even an extended power outage. 



Making Out Like A Bandit

Spawning *Corydoras metae*
by J.T. Thomas

I like Corys, and who doesn't, really. They're cute, there's a bazillion different species, they're inoffensive, some of them will spawn at the drop of a hat, the fry aren't too small to feed, and they're a category 3 fish, worth 20 BAP points. Good fish all around.



Bandit Cory (*Corydoras metae*)
© JJPhoto

<http://www.seriouslyfish.com>
I had had unlooked for success with getting *C. sterbae* and *C. panda* to breed in community tanks, and looked for success in spawning, hatching, and raising a batch of *Albino C. aeneus*, so I was looking for another Cory to try my hand at. Dave at Centreville aquarium had some of these come in at a pretty reasonable price, so I picked up a half dozen and added them to the 55 gallon South American community with my Albinos and Sterbas, and that's where they stayed for about a year.

The Tanks

I set up my breeding team in a 20 long. Over an inch thick substrate of fine sand, I placed smallish rounded stones, boiled oak leaves, and some local driftwood (also boiled). The driftwood was held down with a slab of granite until waterlogged, then the granite was set upright to direct the current from the filter.



<http://completeaquarium.blogspot.com>

Filtration was an Emperor 400, turning over the tank volume 20 times hourly. In retrospect, I cannot recommend this technique in a shallow tank with a sand bottom (the filter eventually developed a leak and had to be scrapped, but not before fooling me into believing the tank was leaking. Grrr.) In the future, I would use air driven box or sponge filters and powerheads to agitate the surface and keep the water moving.

Initially lighting was provided by a single bulb 30" strip light, though now the tank shares a dual bulb 48" shoplight with a pair of 10 gallon tanks. A 75 watt heater was set to keep the tank at 78°F. I used my typical water, which is fairly hard Fairfax county ordinary, with a pH crash brought on by liberal use of AmQuel+ and NovAqua+ in pond concentrations. This brings general hardness down into the low single digits (leaving a bit of carbonate) and brings the PH down to about 6.0. The Oak leaves depressed this further.

For breeding real estate for whiptail catfish (this tank was set up with breeding them in mind), I put in two 6 to 8" lengths of 1.5" PVC pipe.

Into this, I introduced my shoal of 6 *Corydoras metae*, a breeding trio of *Rineloricaria eigenmanni*, and a shoal of 6 Gold tetras (4 of which were certainly *Hemigrammus rodwayi*, and 2 of which may have been something else.) Somewhere along the line, breeding populations of pond and ramshorn snails made it into the tank as well.

I used fishing line to wrap one tube in Java Moss and the other with a bit of java moss and several small java ferns.

Over time, as the Oak leaves decomposed, I started adding Java Moss to replace them, and it currently carpets about a third of the tank. (I will be collecting oak leaves to cover another third the next time I have the chance.)

Conditioning the Breeders

I treat my fish pretty well when I have time, so every evening, into the tank would go 2 or 3 spirulina tables and a couple of different types of food: a rotation of 3 days dry, 2 days frozen, 1 day live, and 1 day nothing in each week. Dry foods included 3 kinds of flake, 3 kinds of pellets, freeze dried bloodworms or tubifex, and (once I had cory fry) cyclopeze powder. Frozen is Bloodworms, Spirulina brine, Daphnia, freshwater frenzy, or mysis shrimp, typically half of a cube. Live food is blackworms and brine.

Over the months prior to breeding, I did a 30% water change weekly, using treated, aged water.

Spawning

I have never seen these cories spawn. Ever. However, while removing whiptail babies, I noticed tiny cories skittering through the leaf litter. I failed to report that at the time, but, having removed all babies from the tank, the very next time I detected free swimming cory fry, I had them checked. Apparently, the Cories deposit their eggs in the leaf litter. Subsequently, I have also seen them deposit small numbers of eggs, grouped singly, on the glass near the water line. Per planetcatfish.com, in nature, they tend to lay their eggs on the underside of the leaves of broad-leafed aquatic plants.



In order to get fry for BAP purposes, a week or so after checking, I removed all décor from the tank and using a fine mesh net and a turkey baster, moved all cory and whiptail fry to a 10 gallon tank set up for this purpose.

Raising the Fry

As I had set up a 10 gallon grow out tank for whiptail fry, I added the cories. The tank has a thin layer of sand, a scattering of oak leaf detritus, a significant amount of java moss, and floating plant coverage, initially Brazilian pennywort (*Hydrocotyl brasiliensis*), but later Water sprite (*Ceratopteris thalictroides*). This was lit by a shared 80 watt 4' fixture, filtered by an air driven Hydro1 sponge filter, and heated to 78 (when necessary) with a 50 watt hang on filter). I fed a twice daily regimen of cyclopeze powder and microworms, or a 2:1 mix of frozen baby brine and frozen rotifers, coupled to a daily spirulina tablet. Water changes were done weekly with aged treated water. I'd squeeze the filters twice, remove all the plants and décor to a bucket with tank water (so as to not lose any fry hiding in them), and then siphon about 5 gallons (in total) of the water.

After several weeks, when the fry began to approach a quarter inch in size, I began moving them to second stage grow out tanks (typically housing some midwater fish). At this point their feeding was reduced to daily, with my typical regimen for small fish (dry food 3 times weekly, typically including flake and

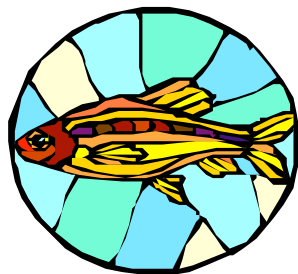
shrimp and spirulina pellets; frozen food twice weekly, usually bloodworms, Daphnia, or Spirulia brine; live food once weekly: Blackworms and Brine, and on Sunday they fasted.) Growth depended on the specific tanks they were in. I believe the batch I brought to a meeting for verification had spent the prior month in a 10 gallon tank with about 30 platy fry.



<http://freshaquarium.about.com>

Conclusions

The biggest trick to spawning Bandit Cories is in the knowing that they have spawned. They scatter their eggs and typically hide them. However, with regular water changes, good food and care, they seem to be about as easy to breed as any of the easier cories.



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FISH IN THE NEWS!!!
by Sherry Mitchell

File this one under Ewww. According to an article on www.lemondrop.com, a Pasadena, Texas woman was angry after her boyfriend took back jewelry he had given her. She retaliated by taking his pet goldfish, frying them up in a pan and EATING THEM. By the time the police arrived, she had eaten three of seven fried fish. I guess it's lucky for her that he didn't keep poison dart frogs.....!

In other news. C.J. Arabis of the RSS feed (www.pawnnation.com) reports on the worlds oldest living pacu – a 41 year old, 20 pound monster named Buttkiss. (Yes that spelling is right). Buttkiss lives in a pet shop in Queens and was born in 1967.

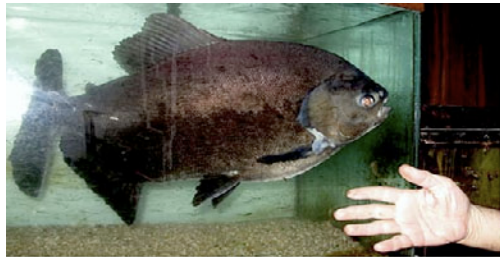


Photo by Gothamist

Speaking of goldfish, another article on www.pawnnation.com by Maria Coder (RSS feed) reports on the largest goldfish caught near Little Rock, Arkansas. Josh Womack, a Little Rock fire fighter caught the gigantic goldfish while fishing on Lake Valencia. He thought the load on the end of the line was a catfish, but was surprised to find a HUGE goldfish 24 to 28 inches long. Womack's fame is fleeting though, as he didn't think to weigh the goldfish. The goldfish can't set a state record without a weight. Womack released the fish back into the lake after taking a photo. Talk about the big one that got away!



Photo: James Knabe/Maumelle Monitor

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