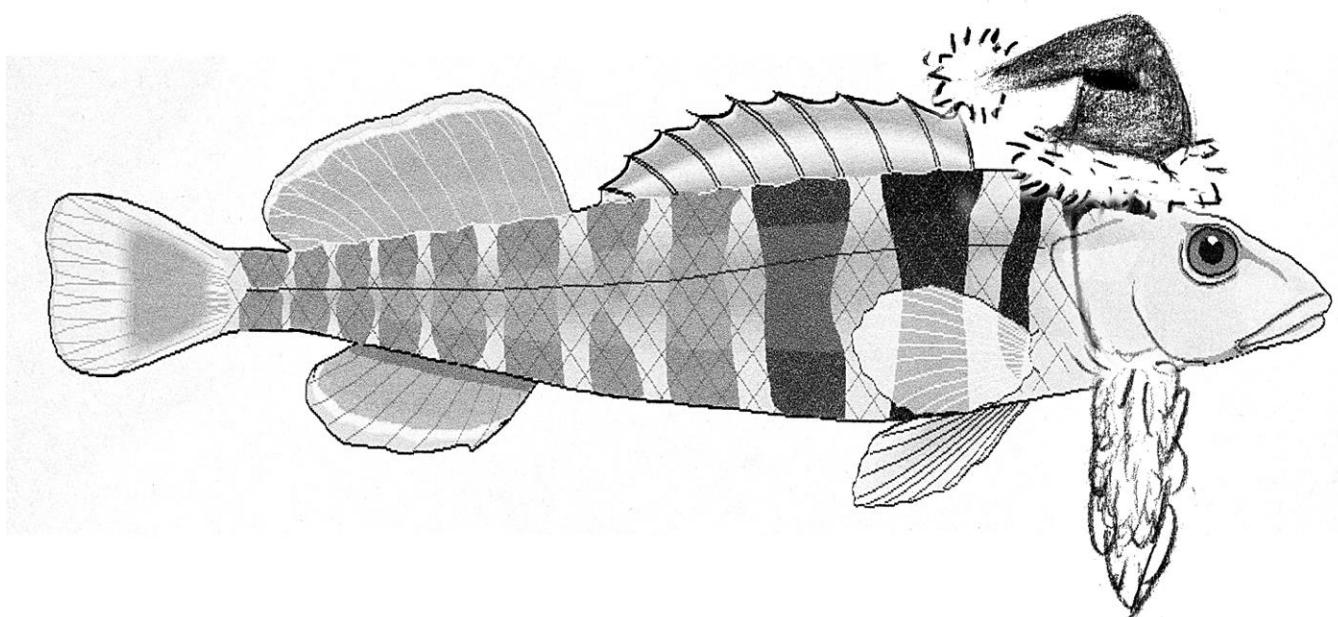


# The Darter

November - December 2005



**MISSOURI AQUARIUM SOCIETY, INC.**  
St. Louis, Missouri

# Aquatico



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# Places to Be Things to See

SATURDAY, December 3, 2005

Executive Council Meeting, 7:30 PM @ Charles and Sue Harrison's

THURSDAY, December 15, 2005

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

THURSDAY, January 19, 2006

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

SATURDAY, January 28, 2006

Executive Council Meeting, 7:30 PM @ Gary Lange's

THURSDAY, February 16, 2006

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

THURSDAY, March 16, 2006

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

THURSDAY, April 20, 2006

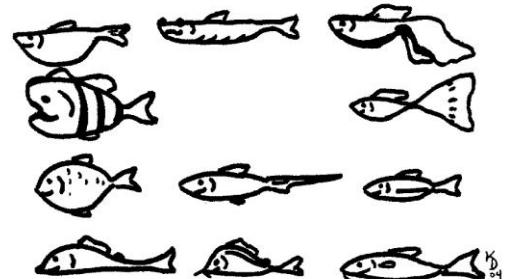
General Meeting, 7:30 PM @ Dorsett Village Baptist Church



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Missouri Aquarium Society, Inc.

Come join us at a meeting, or contact our membership  
chair, Kathy Deutsch for more information  
(314) 741-0474 [fishfan@i1.net](mailto:fishfan@i1.net)



# Presidential Preamble

By Mike Hellweg

Well, here we go again! The Holiday Season is fast approaching, temperatures are much cooler, and sunset comes around dinner time. As if it can't happen, the "new" TV season is more lame than ever. And the Cards didn't quite do it this year – but Spring Training is only 14 weeks or so away as I write this, and the new stadium is quickly nearing completion. Last year's pond season is a thing of the past, and next pond season is just a wish list. So what are we to do in the meantime?

Well, don't forget your fish and your tanks! This is an excellent time to spend with your fish. Turn your attention back to your indoor tanks. Spend some time doing those water changes, cleaning up and pruning the tank, and, more importantly, spend some time watching your fish. That's what we got into the hobby for, but we often forget that is the most pleasurable part of the hobby, just sitting and watching the fish. It will help you to relax, lowers blood pressure, eases the hectic day and much more! It might even give you something to talk about with your kids. You might be surprised with what behaviors you get to see. I'm reminded every day - fish are truly amazing animals!

The club is healthy and growing. Our auctions, in spite of some rules changes that limited the numbers of items going through them, are still bringing in a healthy flow of cash to keep our operation running and to keep your cost of membership down. For the more than tenth year in a row, we will be able to hold next year's membership fees steady again next year. In a time when every other cost seems to be rising, that's a nice change. Gary has worked hard and we have an excellent group of speakers lined up for the coming months. Take time out and come to the meeting. You'll enjoy the comaraderie, the auctions have become amazing, and the programs are great! Even if you think you might not enjoy the topic, you'll be surprised and learn something that will help you. Every talk I hear, and every talk I give, I learn something new.

Our first ever Swap Meet was a success! A healthy crowd flowed through the room, and all the Vendor tables were rented. Most of the Vendors did very well, and were pleased. Most of the attendees seemed pleased, too. We've decided to try it again next year. Hopefully that will be even bigger and better!

And don't forget the writing contest! You're too late for 2005, but you can still write one or more articles for 2006. Go ahead, flood Steve's mailbox! I dare you! You don't need to be Shakespeare or Hemmingway, just write what you see, what you've experienced. If you need help getting started, just ask. With the endowment that Ralph Wilhelm left us, we'll be able to run the Ralph Wilhelm Writing Contest, with a \$100 cash prize going to the winner, for many years to come. What a great legacy to a great hobbyist!

...and for now, 'nuff said...

# The Blue Pin Tail Gourami - *Malpulutta kretseri*

By Mike Hellweg

Hiding among the leaf litter on small Sri Lankan streams, and even among the leaves and plants growing in some family water collection and storage tanks on the island is a gorgeous, yet little known dwarf gourami – *Malpulutta kretseri*. I’ve been told local boys collect them and give them the name Blue Pin Tail.

Males are among the most stunning of freshwater fishes. They are a pale tan color, covered with metallic blue dots. They unpaired fins are bright metallic blue. The dorsal fin can extend well past the caudal base and the central rays of the caudal form a pin tail that is sometimes as long as the rest of the fish!

For many years, this fish has been rumored to be extinct, nearly extinct, endangered, or threatened depending on what source you were reading. Due to the ongoing civil war in Sri Lanka, actual data is hard to come by, even today. They disappeared from the hobby in the late 1980’s, leading hobbyists to fear the worst. But in the last two years, numbers of them have made their way to Europe and from there to the US.

The fish are remarkably undemanding for such a rumored “delicate” fish. In my experience, they are remarkably hardy and prolific. The biggest disappointment is that these gorgeous fish are extremely shy. This might lead to their being thought as more rare in the wild than they actually are. They hide all the time. Males prefer caves, and females seem to prefer hiding in plants. Most of the time, with or without small dither fish, you don’t see them. The tank looks empty. Sometimes a week or more can go by without ever seeing them, especially the females. Not even food can coax them out, though small worms can sometimes coax the male out into the open.

Oddly, young fish are just the opposite, gregarious to the point of not letting other non-kretseri in the tank even get something to eat. Upon reaching maturity, however, they take on the secretive ways of their parents.

As you can guess from their hidden nature, they are also a hidden nest spawner. My males have preferred to spawn in caves made of flower pot saucers. You’ll know something is up when the male doesn’t even come out for a nice, juicy worm, or if he does, it’s a quick dash and then back to the cave. It seems that almost magically one day you are presented with a group of 25 to 40 fry when they become free swimming. I remove the fry to another tank as I see them, though I’ve missed some and they’ve grown up in the tank with the adults, so they don’t seem to be fry predators. This is similar to their cousins, *Pseudosphromenus cupanis* and *P. dayi*, neither of which are fry predators to any degree.

Over the last year or so, I’ve seen a couple of nests that were made by young males in caves up against the front glass. They are small, barely larger than a dime. Spawns are likewise small. I’ve had some spawns as large as 60, but some of the first were only a dozen or so.

I feed adults and juveniles a variety of foods - live, frozen, and dry. They love newly hatched brine shrimp, small Daphnia and Moina. They also enjoy smaller worms like Grindals and young black worms. The fry eat Mikroworms, Cyclopeeze and APR, along with grazing microfauna from the large number of plants in the tank.

The tank setup is simple. I keep a single pair in a 10 gallon tank, filtered by a sponge filter. The tank is tightly covered, as they are rumored to be excellent jumpers. Many other small Anabantoids are, so I’m guessing it’s probably true with them, too. The tank is full of caves and plants, and the surface of the tank is completely covered with Water Sprite. I keep them at a pH of around 7.0 - 7.2 with a total hardness of 125 ppm, mostly from carbonates (about 70 ppm). Temperatures are in the low to mid 70’s. They appear to stop spawning when it gets close to 80.

They are kept alone. My interest is in breeding and studying these fish, not in keeping a "community". Most of the folks that have received fry from me have reported a similar shyness when the juveniles reach spawning age. At least one person tried to keep adult fish with Pygmy Rasboras, thinking these would act as dithers and make the *kretseri* feel comfortable enough to spend time in the open. His fish nearly starved to death. Judging by their shyness, they probably won't do well with a lot of other fish.

If you come across these rare gems, don't hesitate to give them a try. Provide them with their own tank set up in a simple manner as outlined above, and they'll provide you with more fry than you know what to do with!

## Editor's Notes

Steve Deutsch

This issue completes my second year as your editor. Let me know what you think of your Darters, and what could make them serve our club better. We have two new articles by MASi members this month, both by Mike Hellweg. We also have six exchange articles courtesy of our exchange editor. I have a new CD of articles to pick from, so I can keep filling Darters for several months, but I would like to feature more of our authors. We did have several new authors this year, which is great. We will be drawing the ticket for the author's prize at the Christmas meeting, based on the rules printed earlier this year. Now that the year is complete I will also be gathering all the articles to be judged for the Ralph Wilhelm Publication Award judging, which will be a \$100 prize to be awarded at the spring banquet. We have raised enough money selling the items Ralph bequeathed to the club to continue the prize for several more years, so it's not too soon to start writing for next year's Darters for a chance at next year's award.

## Special Buy!

***Success with Discus*** by Jim E. Quarles

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Covers things that apply to all hobbyists such as water quality, water changes, using peat, oxygen, filters, disease, and specific things for Discus such as breeding, feeding, raising the fry away from parents, handling adults, etc.

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**JIM  
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# HAP Report

Mike Hellweg

Member	Species	Common	Rep	Pts	Total
<b>September - October '05</b>					
Jerry Jost	<i>Blyxa aubertii</i>		V	15	610
Jerry Jost	<i>Eleocharis acicularis</i>	Dwarf Hairgrass	V	10	610
Jerry Jost	<i>Nuphar japonica</i> *	Japanese Spatterdock	V	20	610
Charles Harrison	<i>Hygrophila corymbosa</i> <i>angustifolia</i>	Willow Leaf Hygro	V	5	325
Charles Harrison	<i>Cabomba palaeformis</i> *		IB	15	325
Charles Harrison	<i>Shinnersia rivularis</i>	Mexican Oak Leaf	V	10	325
Gary Lange	<i>Shinnersia rivularis</i>	Mexican Oak Leaf	V	10	1095
John Van Asch	<i>Colocasia antiquorum</i> Black Magic	Black Magic Taro	OB	15	555
John Van Asch	<i>Colocasia antiquorum</i> Black Magic	Black Magic Taro	S	15	555
John Van Asch	<i>Limnobium spongia</i>	Frogbit	V	5	555
Micky Lee	<i>Sagittaria graminea</i> <i>graminea</i>	Common Sag	OB	5	580
Gary McIlvaine	<i>Cabomba caroliniana</i> <i>caroliniana</i>	Fanwort	V	10	20
Gary McIlvaine	<i>Ceratopteris thalictroides</i>	Water Sprite	V	5	20
Gary McIlvaine	<i>Vallisneria spiralis</i>	Italian Val	V	5	20

Reproduction Key: V = Vegetative, OB = Outdoor Bloom, IB = Indoor Bloom, S = Seedling

\*= MASI First

# Club Hopping

Steve Edie

Dec 4 - Arlington Heights, IL: Greater Chicago Cichlid Association – Swap Meet

March xx, 2006 – Hartford, CT: Northeast Council – Annual Convention

July xx, 2006 – Chicago: American Cichlid Association – 2006 Annual Convention

Oct xx, 2006 – Laurel, MD: All Aquarium Catfish Convention

# BAP Report

Steve Edie

Member	Species	Common	Pts	Total
<b>Sept 2005</b>				
Diane Ciezadlo	<i>Betta Splendens</i>	Red Betta	10	10
Charles Harrison	<i>Chromaphyosemion bitaeniatum</i> 'Zagnando' *		20	1250
Mike Hellweg	<i>Poeciliopsis gracilis</i>	Porthole Livebearer *	20	2298
Cory Koch	<i>Neolamprologus brevis</i> "Sunspot"		10	30
Cory Koch	<i>Vieja synspila</i>		15	45
Gary McIlvaine	<i>Corydoras aeneus</i> – albino		10	22
Gary McIlvaine	<i>Poecilia reticulata</i>	Blue Grass Metal Head Guppy	5	27
Gary McIlvaine	<i>Poecilia reticulata</i>	Multi-Color Guppy	1	28
Gary McIlvaine	<i>Xiphophorus helleri</i>	Hi-Fin Lyretail Swordtail	5	33
Ed Millinger	<i>Inpaichthys kerri</i>	Kerri Tetra	15	490

## Oct 2005

Jack Berhorst	<i>Fundulopanchax gardneri</i> "N'sukka"		15	105
Mike Hellweg	<i>Archocentrus spilurus</i>	Cutter's Cichlid	10	2308
Mike Hellweg	<i>Xiphophorus evelynae</i> "Rio Tecolutala"*	Evelyn's Platy	10	2318
Mike Hellweg	<i>Xiphophorus</i> sp. "Domestic Swordtail"	Blue Mystic Swordtail	1	2319
Gary McIlvaine	<i>Archocentrus nigrofasciatus</i>	Pink Convict	5	38

\* = First MASI species spawn (5 point bonus)

\*\* = First MASI genus spawn (5 point bonus)

\*\*\* = First MASI family spawn (5 point bonus)

# Finally I Made It - Cardinal Tetras

by Rene Jez

reprinted from **Tank Talk** of the Canberra and District Aquarium Society, Australia

Visiting Jem Aquatics shop I saw some pretty young Cardinal Tetras from a recent shipment. The fish were in excellent condition, of good shape and young, just ready and promising.

In the past I have bought, tried to breed and wasted probably well over 300 dollars on Cardinals. The visit to the shop tempted me once more. With Bob's (the owner) permission I was able to select two pairs by myself because my 'spending spree' would stop a shop assistant from doing business for a long time. At home I conditioned the Cardinals with live food only and they quickly grew to the spawning size of the Neon Tetra. Mature Cardinals are larger when well fed.

The rule for breeding Tetras is to try to spawn young fish as soon as possible to avoid egg-bound females.

The Cardinal Tetra was discovered in 1952 in the upper reaches of the Rio Negro in Brazil. After being given the initial name of *Hyphessobrycon cardinali*, there was a genus revision in 1983 and they are now known as *Paracheirodon axelrodi*.

Cardinals live in coloured water and shaded areas with slow water movement. These quiet parts of the river are known as remansos. The local collectors know well "no remansos - no Cardinals". The richest spots can yield 5-8 fish per metre square. The remansos are typically 1.5 - 6.0 metres long and 0.8 to 2.5 metres wide. Depth of water 0.2 to 0.4 metres with a maximum of 0.7 metres, water temperature 26.5 C.

The water is extremely poor in food. The Cardinals live in schools of mature specimens (23 - 28 mm long ~ ready to spawn) and juveniles around 13 mm long. The largest Cardinals in the wild are 30 to 33 mm. Aquarium fish grow to 50 to 65 mm and live 6-7 years while the Cardinals in nature only manage 12 to 16 months.

Young Cardinals should be grown in soft water (Canberra water is perfect) to stop degeneration of their kidney. Spawning conditions require (according to European breeders) pH 4.6 to 6.2 (optimum 5.8), hardness of 40-60 mS.

Cardinals lay their eggs in darkness, thus darkening of the spawning tank is required. Eggs are laid in 8-14 day intervals with up to 150 even 350 eggs. They are ready to spawn at 6-7 months of age.

With all the knowledge available from the hobby literature and my European friends I have set up spawning tanks for this species probably a hundred times, without much hope. It was extremely demoralizing when someone in our Society claimed a spawning of Cardinals and raising them in a community tank. It puzzled me as I have bred hundreds of Neon Tetras, and fry up to 3 weeks of age are sensitive and require properly sized food.

The spawning tanks were little 200 x 200 mm by 150 mm high (hold 4 litres of water) similar to those used in Europe. On the bottom I placed a stainless steel gridmesh to protect the eggs from their hungry parents. The water used was from the Snowy Mountains, melted snow creek, pH 6.8 and extremely soft. I didn't bother to lower the pH or add peat moss. If the fish spawned, then I would adopt a more scientific approach.

I added the fish and spawning medium, a bunch of nylon fishing line. I darkened the tanks, each containing a pair of fish. I prefer spawning Tetras in pairs. This gives perfect control of productive pairs and limits interference from other fish. The tanks can be very small. This is not applicable for spawning Congo or African Flag Tetras where the spawning 'run' is fast and long, or some aggressive Tetras where larger tanks are better.

My friends in Europe tell me they keep each pair in the spawning tank for 3 days (remember no food) and then they try a new pair. With my two pairs it was easy, 3 days in, 7 days out. After a few

cycles, checking daily revealed eggs under the gridmesh. It was great. A few eggs were fungussed but most were glassy. The pair was removed. Water temperature was 26 0 C.

After 1-1/2 days around 60 fry developed. I kept them darkened and by the fourth day started to observe when they needed food. The problem was they kept standing vertically against the glass when the light penetrated. Determining when to start feeding was a nightmare. A magnifying glass and careful observation of the egg yolk tummy size helped.

I was expecting very small fry, as the eggs are smaller than Neon Tetras'. They were 3-4 mm, similar to Neons. Growth is described in the literature as slow. I found it disgustingly slow and to provide tiny live food I had to collect nauplii of Cyclops (freshly born small Cyclops: crustaceans that live in the paddock ponds) on a daily basis, strain them to the required size and not overfeed. Future followers please note: Brine Shrimp are monster food and are taken only after 4 to 6 weeks, so big are they! In that time I quashed the claim of breeding Cardinals in a community tank. The fry would be wiped out in no time by the other fish.

After 3 weeks I introduced by mistake some larger food, some still very small Cyclops. The fry were attacked by a few adult Cyclops and I quickly lost 30 fry.

In 4 weeks the Neon Tetra fry shine like their parents and their length is 10-12 mm. The little Cardinals were 8-9 mm and at that time the red colouration started to appear dully, but the neon strip wasn't shining at all. They took another 5-6 weeks to start looking like miniature adults. Still, feeding was a problem. Microworms were not taken terribly enthusiastically. Introduction of larger Cyclops was always a disaster with the loss of a few more fry. Neon Tetras, once they have their full colours although still small, are pretty tough and are willing to eat relatively large food (the same size as their eyes) but Cardinals are finicky.

With all the problems of getting two Cardinals willing to spawn, fulfilling the requirements of water chemistry, extremely slow growth of the fry, and the feeding difficulties I have very little patience left to breed them in larger numbers. This is a pleasure that I leave to others.

## Neon Shiner - Another "Holy Grail"?

by Charley Grimes

reprinted from *Fancy Fins* of the Circle City Aquarium Club

When I first got into the native fish part of the aquarium hobby, slogging through creeks in Central Indiana with buddies seining up the occasional Orange Throat Darter in the spring or a hand-sized Sunfish in full color seemed enough to satisfy any ole country boy.

Then, twenty some odd years of age, at a weekend workshop, I saw a slide presentation that included the Bluenose Shiner, *Notropis welaka*. That picture was the catalyst for at least two dozen collecting trips to the Southeast over the next twenty years. I collected lots of really cool fish in those two decades but I never saw *N. welaka*. Specifically, I never collected *N. welaka* in all the Gulf States, as well as a couple other states that were mentioned in the collecting data.

Finally, a couple years ago, at the invitation of and on a collecting trip led by the colorful and entertaining BG Grainer, I finally collected *N. welaka* in a remote corner of Louisiana. Following BG's advice, we were there at the proper time to find *N. welaka* in peak condition and color. Seeing those magnificent fish in my seine, and five minutes later in the photo tank, made all those years, all those miles, and at least part of all that money worthwhile.

The spring of 2000, for reasons too weird to justify or relate, I was in Southwest Mississippi with nothing to do for a week. Thanks to NANFA (North American Native Fishes Association) membership lists, the Internet, and a couple phone calls, I was able to con Martin Moore into taking me collecting in

Mississippi and then join me for a trip over to Bake, Louisiana and a couple days with BG Grainer. While at BG's place, quite naturally, I was looking over his fish collection, both inside the house and the aquariums on his patio. There was one tank that housed some absolutely stunning fish. These fish actually glowed, almost as if they were plugged into electricity. When asked, BG advised me that the fish were Neon Shiners, *Notropis crosomus* that he had collected in Alabama.

I'll guarantee no picture I ever saw of this fish did those critters justice. These fish would easily rival Neon Tetras in color intensity and, since the Neon Shiner is at least four times as big as Neon Tetras, it is logical that these fish are four times better!!! The minute I saw these fish I knew I wanted to collect some for myself. Big surprise that I had the "hots" to catch some for myself? Spring of 2001 found me and one of my dysfunctional friends making a last minute kamikaze collecting trip to Alabama to get Neon Shiners. Internet and NANFA membership list to the rescue again! I contacted Bruce Stallworth, a NANFA member from Huntsville, Alabama, who was gracious enough to agree to guide us to the Neon Shiners.

On the way down to Huntsville, John and I, having never met or even talked by phone with Bruce, tried to visualize him. I decided he was a hilljack "redneck" that was undoubtedly a NASCAR fan and quite likely from a family of bootleggers. John, more charitably than I, decided that Bruce was an old-timer that had spent his 75+ years in the outdoors and would be the Daniel Boone / elder statesman type. I can't make up my mind if I was relieved or disappointed when Bruce turned out to be a college instructor, a history buff and an accomplished photographer as well as an aquarist! For sure, if he had been a redneck bootlegger it would have made for a better story. In the future, when I relate to this adventure, I may hint that Bruce had some background in car racing or rum-running. Actually the truth was pretty good as Bruce turned out to be both a delight and a darn good guide. He regaled us with local Civil War history and local lore and then put us right on top of the Neon Shiners.

As Bruce and I were unloading the collecting gear and, being distracted by a "photo opportunity", John headed straight for the stream. In short order he reappeared with a big grin with something clutched in each hand. The rascal had a newt in one hand and a salamander in the other. Since he didn't actually want any fish, he was already having a lot of outdoor fun.

The stream, actually running through a town, was attractive, clean and full of fish. Actually the general area was picturesque and attractive. We were able to collect a couple dozen Neon Shiners in rather handy fashion, which is why we went. The icing on the cake was the opportunity to spend a day with the entertaining Bruce Stallworth and to have a chance to see the area. One of my other hobbies is photography and I want to go back to this part of Alabama, camera in one hand and seine in the other, for two or three days.

It was a great way to spend a weekend and all the fish I collected made it home with nary a loss. The fish adapted to aquarium life quite easily and were eager feeders, gobbling flake food within 48 hours of being caught. The fish were very attractive - kinda of red with gold highlights - and looked great in the aquarium. But they weren't nearly as colorful as those I saw a year earlier at BG's place. Oh well! They're still pretty good!

While in Louisiana last month (another story), I mentioned to BG Grainer that my Neon Shiners, while attractive, didn't have the hot neon blues and reds that his fish had, I even checked the photos I took to make sure my memory wasn't totally faulty. BG advises me that some populations are more colorful than others, and said that there is even a better collecting location where the fish are even more intensely colored. And he is willing to take me there next spring.

So, I guess I'll be back in Alabama next spring. Ain't life great? PS: I saw some Mountain Red-bellied Dace while I was at BG's place - they are stunning - Gotta have some - hope I can stand it until the spring of 2002!

Pressure! Pressure! Pressure! So many fish, so little time!

# An Excess Of *Astyanax*

by Paul McFarlane, H&DAS

reprinted from Feb '03 *Monthly Bulletin* of the Hamilton & District Aquarium Society

Do you want to spawn and raise a few characins? There's a simple recipe. First buy a trio of *Astyanax bimaculatus*. Then set up five or six fifty-gallon tanks. But wait a minute - we're a little ahead of ourselves. What the heck is an *Astyanax* anyway?

The genus *Astyanax* consists of a large number of species of New World characins. They are to be found almost everywhere in tropical and subtropical America and even into the USA. Most species reach a length of 2 to 4 inches, some about 6 and one (*A. maximus*), 8". Generally speaking, *Astyanax* species are rarely seen in the hobby. The reason is very simple; for the most part they are very plain fish which sell poorly and so are simply not often imported. From time to time one will see *A. bimaculatus* or *A.*

*fasciatus (mexicanus)*, but that is about all. The one major exception of course is the blind cave characin, which is sometimes called *Anoptichthys jordani* but which is actually an eyeless, unpigmented form of *Astyanax fasciatus mexicanus*. Because of its unusual characteristics this fish is almost always available to the hobby.

The star of this article, *Astyanax bimaculatus*, has two things to recommend it. It won't usually seriously hurt anything it can't swallow and when fully grown (about 6"), it makes great Musky bait (just kidding - we wouldn't want to put non-native fish into local waters even if they wouldn't survive a winter!). Otherwise the fish doesn't give you much to get excited about. As the name implies, there are two black spots - one on the "shoulder" and one at the caudal peduncle. You can also see some tinges of washed out red in the fins but other than this the fish is six inches of silver grey. But when a friend (?) gives you a half dozen of them and fishing season is six months away, what else can you do but try to spawn them? Breeding programs kind of get to you after a while. After due consideration I decided that my usual five and ten gallon tetra spawning tanks wouldn't do. Fortunately I had an empty 50-gallon tank which I filled with tap water and to which was added a large clump of Java moss. A female, recognized by her egg-swollen abdomen, and a male were netted from their tank and unceremoniously dumped into this meticulously set up spawning tank. The male almost immediately darkened up and began to chase the female. An hour later it was all over - nothing had happened but it was all over nevertheless. For the next 3 or 4 days the two fish swam around, ignoring one another.

Balking at the idea that I might have to soften 50 gallons of water to kindle their interest, I decided to first try adding another male. Almost as soon as this was done, both males started chasing the female and were still at it an hour or so later when I went to bed. Kinky fish! . ;

Some mornings are good and some aren't. That morning when I checked the tank I wasn't quite sure which kind it was. The two males were swimming lazily around the tank with (I swear), stupid smiles on their faces. The female was under the Java Moss and looked dead. It turned out she wasn't but at that point she may have wished she was. Almost the entire bottom of the fifty-gallon tank was covered with eggs! One would think that a 6" long fish would have the decency to produce large eggs. Not these suckers. A female *A. bimaculatus* holds between 5 and 10 thousand eggs and apparently, when she spawns she spawns them all! To make matters worse, the eggs hatch in about 18 hours and the fry are free swimming in about 36. Not even enough time for fungus to kill a few of them.

After 3 or 4 days the tank began to look like it contained a good hatch of brine shrimp - wall-to-wall fish in dense swarms everywhere you looked in the tank. I added a lot of aeration in a hurry and began to calculate how soon the brine shrimp bill would force me into bankruptcy.

After a week, very few of these turkeys had died and, worse yet, they were growing. I knew that to raise them all I would have to split them up into the 5 or 6 fifty-gallon tanks I mentioned earlier. Not

being entirely crazy, I left them where they were and let nature take its course. I even added a couple of fish that I wanted to fatten up.

Nature soon did begin to sort things out. Before long a number of the fry were noticeably larger than their brethren. As time passed the larger ones became even larger and the number of fish in the tank became smaller and smaller. By the time everything was sorted out (about 5 weeks), there were about three hundred fish left, the largest of which were nearly 2" in length. But by now the smallest fry were too large to be eaten and the population stabilized.

It was an interesting experience!

# Colours of the Rainbow

by Ian Fuller

reprinted from Jan/Feb '04 *Aquatica* of the Brooklyn Aquarium Society

For anyone like me that specializes in Catfishes, in my case it has been Corydoras for more than twenty-five years, there can be a lot of tank space, which is totally unoccupied. To be more exact, I would say that eighty percent of any specialist Corydoras tank is devoid of fish save for the catfishes occasional foray to the surface for a gulp of air.

Over the years I have introduced many types of fish into my Corydoras set-ups, and by far the most rewarding are Rainbow fish. They come in many shapes and sizes not to mention colours, the vast majority of which can in my opinion be compared to those of marine fishes.

When you give them a little thought, Rainbows have got a lot going for them, when you look at the facts; they are moderately sized, ranging from as small one and a quarter inches, or thirty two millimeters if you are not old enough to remember feet and inches, and up to around five and a half inches or fourteen centimeters for some of the larger species. Other major pluses with these fishes are that they will eat just about anything that is offered to them and when settled they will even take food from your fingers. They are very active, always on the move and do not seem to have any aggression in them, which for me is a definite plus as they can be put into tanks with smaller fish. Their tolerance to water types is in the main fairly wide; there are of course those that require more specific conditions but those species I would leave to the specialist.

The number of species to choose from is quite considerable and what really determines the species to keep is the size of the tank or tanks that are available to keep them in. In my case most of the tanks in the fish house are relatively small, between six and eight gallons (25 to 30 liters) with the exception of eight stock/growing on tanks, which hold about twenty gallons each (90 liters) it is in four of these tanks that I decided to try my hand at keeping a few Rainbow species and maybe even try my hand at breeding some of them.

My first acquisitions were six young *Melanotaenia boesemani* (Allen & Cross, 1980) from Irian Jaya, northwest New Guinea; these fish were just over one and a half inches, thirty-eight millimeters. They didn't look much in the colour department at that size, but it was the colour pictures of a group of adults that had sparked my interest in the first instance, so I knew what the potential with them would be. It wasn't many months before they had almost doubled in size and had taken on some fabulous yellow/orange and blue/green colouring, which they seemed to be able to switch on and off at will, especially the blue, which would almost disappear and become light grey with dark grey and black blotches and vertical bar.

My second acquisitions were seven fish that were just listed as 'blue rainbows' these came at a very reasonable price too, as the shop is not renowned for its low prices. Like the *M. boesemani* these fish were not very large and did not show very much colour at all, there was just a hint of blue on the

back of five of them, the other three were just silvery grey. Within a few days the new fish had settled down into their new environment and one or two of them had started to give a hint of things to come, two of them in particular started to show some bright blue/green colouring on the upper half of the body. By the time I had had them for six months they were almost three inches in length and were displaying some brilliant colouring. One minute they would be showing brilliant blue on the upper half of the body with snow-white undersides, then within a split second the blue would change and the whole body would become iridescent sea green. The most striking feature of all is a bright golden yellow flash, which runs down the head from the dorsal fin to the tip of the snout, this they can turn off and on according to the mood they are in. Once these fish had started to show their mature colours it was not very difficult to put a name to them, which I did with the aid of Dr. Gerald Allen's excellent book *Rainbowfishes in nature and in the Aquarium*. They turned out to be *Melanotaenia lacustris* (Munro, 1964) originating from central Papa New Guinea.

The third species, which I decided to buy, were a group of six *Melanotaenia praecox* (Weber & De Beaufort, 1910) these originating from Irian Jaya in northern New Guinea. The colours of these fish, even when quite small can only be described as absolutely brilliant; the whole of the body is a metallic sky blue and the fins are bright red on the males and orange on the females. As soon as I saw them I had made up my mind that I must have some and promptly purchased three pairs. This is a stream dwelling species, so I decided to house them in a tank that had a good flow of water created by a fairly powerful internal filter. Their other tank mates were to be a group of eight *Rineloricaria* catfishes (Whip-tails), which spend most of their time rooting about amongst the leaf litter and pieces of bogwood on the bottom. The tank is eighteen inches deep (45cm) so there is plenty of free-swimming space for them.

All three species were housed in tanks at the same level in the fish house, giving them all the same temperature range of between 76 F (24.5 C) and 80 P (26.5 C). The *Melanotaenia boesemani* were tank mates to eight *Corydoras robustus* and a *Baryancistrus* species of sucker mouth catfish. The *Melanotaenia lacustris* had a male 'Black lancer' catfish, *Bagrichthys macracanthus* and a pair of 'Snowball plecs' *Ancistrus* species, for company.

For each of the three tanks I made up two floating spawning mops, these were made using green four ply synthetic wool. Each one, was made by winding the wool thirty times around a piece of card of approximately eight inches (20 cm) long, then tying off at one end of the loop and cutting through the other end, all the mops were soaked in boiling water for a few minutes, this does two things, firstly it will remove any excess dye and secondly it makes the wool go a little curly giving it a more plant like appearance. The tied off ends are then attached to pieces of floating sponge material.

When buying young immature fish the main initial difficulty is determining the sexes, some species are easy to sex others are not; my recommendation would be to buy at least six fish or even more if they are affordable. Some species like *Melanotaenia praecox* can be sexed by the colour of their fins as mentioned earlier, with other species the males have more intense brighter colouring. Generally the main sexing feature in adult fish is the shape and size of the dorsal and anal fins, the males fins tending to be more elongated and pointed, the front dorsal fin when laid back overlapping the front edge of the rear dorsal fin.

Because males can be quite physical when in breeding mode it is a good idea to buy two females for each male, this should avoid the possibility of a female being driven to exhaustion by an amorous male.

Once these fish reach maturity I have found them relatively easy to spawn. The first of the rainbows to start spawning were the *Melanotaenia boesemani*, they scattered their eggs into the floating mops, spawning would occur almost daily and usually just after the lights came on, the most prolific time of all would be the morning following a water change. It is from this point on that things get more difficult. Compared to the size of the fish the eggs are quite small, one millimeter in diameter or less, they are colourless, looking like tiny droplets of water, and can only be seen clearly when the mops have been removed from the tank and the water gently squeezed out. The eggs are quite resilient and can be

picked from the mops easily. I had placed two small shallow tanks of approximately 18"x 6"x 6" (45cm x 15cm x 15cm) on top of each of the main Rainbow tanks, filled them with water from the main tanks below, fitted each with a sponge filter setting the outlet level with the surface and set the air to give a gentle

the first two months after hatching, but were also ideal for the second stage with growing on the rainbow fry.

I removed the mops from the main tank, then after squeezing out most of the water, carefully picked off all the eggs I could find putting them into a small hatching container, for this purpose as with Corydoras eggs I use 1 litre ice cream tubs with an air supply fitted to give the water some movement. Altogether more than sixty eggs were collected, which took ten days to start hatching, once all the fry had hatched they looked like a cloud of tiny dark grey splinters just below the surface of the water. The next problem would be how to feed such tiny creatures.

The initial method I used for these tiny Rainbow fry is the same one I used many years ago when breeding Siamese fighters. The basic ingredient is green water from an old tank kept outside in a sunny spot, (what sun I hear you say). I took an old plastic lemonade bottle and glued a plastic airline valve into it about 1 inch (25mm) up from the base, three quarters filled it with the green water, to which I added two drops of egg-layer liquifry, making sure to thoroughly stir it in. The bottle was then placed in a position above the fry container, the air valve was then opened just enough to allow a droplet of liquid to form, which would then drop into the container. This is a great method of feeding especially for those of us that are out at work for most of the day. Gauging the rate of drops is a matter of trial and error but the longer the time between each drop the better I managed to regulate the drops to one every ten minutes. After four days of the drip-feeding I started to add small amounts of micro worm, alternated with a very fine powdered flake food, taking care not to add too much at a time. This feeding regime continued for two weeks, to avoid any pollution from uneaten foods daily twenty percent water changes were made using water of exactly the same chemistry and temperature. After two weeks the fry were carefully moved to one of the larger tanks above the main stock tanks, at this stage they were now large enough to start introducing newly hatched brine shrimp. As the fry grew larger type foods were introduced and by the time they were three months old they were taking live daphnia, frozen as well as live bloodworm, but the food that really made them shine was finely chopped earthworm. Whenever the adult breeding stock was conditioned using earthworms the volume of eggs was always higher.

The same breeding and rearing regime was used for both *Melanotaenia lacustris* and *Melanotaenia praecox*, with the *Melanotaenia praecox* fry proving the most difficult of the three to raise. Out of a batch of sixty eggs ten or twelve fry would be raised, suggesting to me that larger tanks would be required to ensure a better survival rate.

## Member Classifieds

Charles Harrison (314) 894-9761, [csharrison@inkmaker.net](mailto:csharrison@inkmaker.net) -

OTO Chlorine test kit, 4 ounces \$12.50 last for about 2 years, detects traces of Chlorine in tap/tank water, and other "Chemicals for the Fish hobby"

MASI Members can place a classified ad in the Darter for free. Ads may be up to 30 words in length. Send your ads to the editor. The ad will run for one issue unless you specify how long to run in, in which case it will run as requested.

# Raising Vinegar Eels

by Bob Maichle, H&DAS

reprinted from Nov '01 *The Monthly Bulletin* of the Hamilton & District Aquarium Society

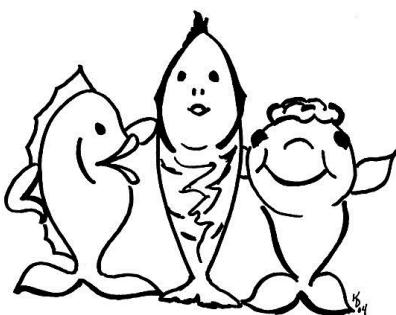
Vinegar eels are among of the easiest and most inexpensive of all live foods to raise. I have one culture that has been going for just over three years with no attention at all. Now, I don't recommend ignoring your live food cultures, but I think this shows just how durable these little creatures are. If you have time between raising fish with extremely small fry, the culture will be there when you need it. I have fed vinegar eels to killifish, rainbows, anabantids, livebearers, cichlids, and catfish fry.

To raise vinegar eels you need a glass container. I use large spaghetti sauce jars, but any size will do. I know of one person who uses drum fish bowls. Save the lids; I leave the lid on loosely to keep dust and insects out of the culture. The ingredients for the culture are apple cider vinegar, aged tap water (do not use aquarium water), a start from another culture, and a small piece of apple (optional). I use a 50/50 blend of the cider and aged tap water. If you have very hard tap water, you will need 60% vinegar. Be sure to use non-distilled apple cider vinegar because no other vinegar will work as well. It takes two to three weeks at room temperature out of direct sunlight for the culture to product enough eels to begin feeding them to your fish.

When the culture is ready to harvest, you will need a small clear glass, a small funnel, a coffee filter, and an empty jar. Pour 70% of the culture through a coffee filter (folded twice it fits perfectly in the small funnel I use) into the empty jar. The coffee filter will catch the adult vinegar eels. Allow the filter to drain well then turn it upside down into the clear glass that is filled with aged tap water. If you hold the glass up to the light, or shine a flashlight through the glass, you will see thousands of eels. These can be poured directly into your tank. I swish the coffee filter out in a tank containing adult killifish or livebearers. The culture that went through the coffee filter still contains eels that were too small to be caught by the filter. These can be divided up to start new cultures, or added back to the original one.

If you have spawned fish with small fry and had difficulty raising them, this is one food that will prove successful. Feeding live food to your fish from the beginning will speed up the rate of growth and improve their health and vitality.

## Membership



Yearly membership in the Missouri Aquarium Society, Inc. is \$20 per calendar year. Membership includes the Darter subscription for the year, which is currently 6 issues. New memberships and renewals can be submitted at club functions such as meetings and auctions, or by contacting our membership chair, Kathy Deutsch at 314-741-0474, [fishfan@i1.net](mailto:fishfan@i1.net), or 9 Old Jamestown Ct. Florissant MO 63034

# The Computer Page

Steve Deutsch

MASI's official web page: [www.missouriaquariumsociety.org](http://www.missouriaquariumsociety.org)

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# An Update to the Missouri Wildlife Code that you need to be aware of

By Mike Hellweg

While this won't affect most of you, if you are a fan of Snakeheads or Clarias Catfish, they have both been banned in Missouri. The regulation says they

***"may not be purchased, sold, imported, exported, transported, or possessed in Missouri without written permission of the Director of the Missouri Department of Conservation."***

As of September 30, 2005, the Missouri Wildlife Code has been updated to include the following regulations:

Missouri Department of Conservation  
Division 10  
Chapter 4 General Provisions  
3 CSR 10-4.117 Prohibited Species

**(c) Fishes:** *Live fish or viable eggs of Snakehead fish of the Genera Channa or Parachanna (or the generic synonyms of Bostrychoides, Ophicephalus, Ophiocephalus, and Paraophiocephalus); Walking Catfish of the family Clariidae; and*

**(d) Invertebrates:** *New Zealand Mudsnail, Potamopyrgus antipodarumi; Rusty Crayfish, Orconectes rusticus; Australian Crayfish of the genus Cherax (the Blue Yabbies that some of you may be keeping – not to be confused with the so-called Blue Lobsters of the genus Procambarus); Mitten Crabs of the genus Eriocheir; Zebra Mussels, Dreissena polymorpha.*

They are not looking to hunt down people who are keeping these animals, but they do want to make sure that they do not, under any circumstances, get released into the wild. If you are keeping any of the above animals and wish to dispose of them, please contact your local Conservation Officer as they are looking for animals for an educational display they are putting together.

**PLEASE DO NOT, UNDER ANY CIRCUMSTANCES, DUMP THEM INTO ANY BODY OF WATER!!!!**

The Aquarium hobby as a whole already has an undeserved bad reputation thanks to some of the idiots who do those sorts of things - don't make it true for any more of us.

**Renew Now for 2005**

Membership in the Missouri Aquarium Society, Inc. is \$20 per calendar year. Renewals can be submitted at meetings and auctions, or by contacting our membership chair, Kathy Deutsch at 314-741-0474, [katfish@i1.net](mailto:katfish@i1.net), or 9 Old Jamestown Ct. Florissant MO 63034

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# Spawning Report: Freshwater Stingrays

Bobby Woolwine

reprinted from July/Aug 02 *Fincinnati* of the Greater Cincinnati Aquarium Society

*Potamotrygon reticulata* live in the Amazon River and rivers off of the Amazon. They are one of many fresh water stingrays. They are also called "Tea Cup" rays and Long-tailed Stechrochen. They are the most common.

When my brother and I got our rays, we didn't know what we were getting into. We wanted a salt-water aquarium, but our parents wouldn't let us. Then we saw the fresh water stingrays but we didn't know much about them, so we did some research and found out how to keep them. We put our money together and purchased a 75-gallon tank with a canister filter and purchased our two "Tea Cup" rays from House of Tropics here in Cincinnati. They were both about 5 inches in diameter and still very much babies themselves. We then later found two other stingrays, *Hystrix*, one at House of Tropics and the other one from World of Pets In Florence. These are their only tank mates.

We noticed one day that the male was picking on the female. We thought they were fighting so we did some research. I read in one of my many books that this is flirting, and this was after we had had them for about a year. We started seeing more signs. They started to grow so we bought a 180-gallon and about 8 weeks later we moved them. They adjusted very well to their new environment and they started the flirting again. I believe the 75-gallon tank was too small. After about 6 months in the 180-gallon, my brother moved away to Ann Arbor, Michigan and I was left here to tend to our rays. I maintained the tank totally with only a small bit of help from him on the weekends when he was home and sometimes my parents if we had a power outage,

Not even a year after moving them to the 180 gallon we got babies! I didn't know for sure if she was pregnant, but I noticed she acted a lot different and stopped eating about 2 days before the birth. I got worried. I had noticed several weeks earlier that she was getting larger in the back and staying a lot on the sides of the tank and that she would only come down to eat.

One day at school, my mom showed up with no notice. My Dad had noticed a long, white, stringy substance in the tank and investigated it. He discovered the first of the two babies in the tank and called my Mom to come to school to get me to help. They both knew that my brother and I had done the research and would surely know what to do next. So I got home and there was a healthy, fat, little tiny baby. The mom was caved in on one side and I knew she was going to have another one because it is rare for them to only have one. Then one morning about 2 weeks after the first one I came down and I thought I was seeing double. Many people said it would just be a few days if she was going to have anymore, but we had read that it could be 2 to 3 weeks before another one was born.

The adult rays eat red worms and also fresh bloodworms. The older baby eats fresh bloodworms and some frozen mysis shrimp and the younger baby eats mostly frozen mysis shrimp.

If you have any questions please feel free to e-mail me at [bobby@woolwine.net](mailto:bobby@woolwine.net) and you also can pick up these books:

Special Freshwater Stingrays from South America and Rochen Freshwater Stingrays by Richard A. Ross

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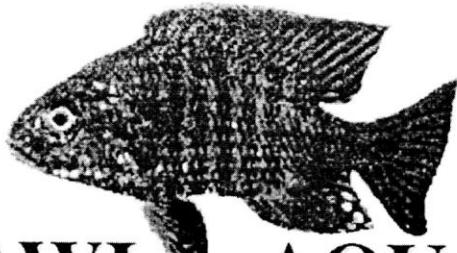
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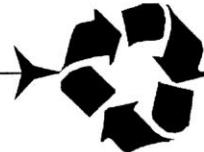
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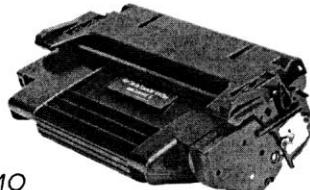
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