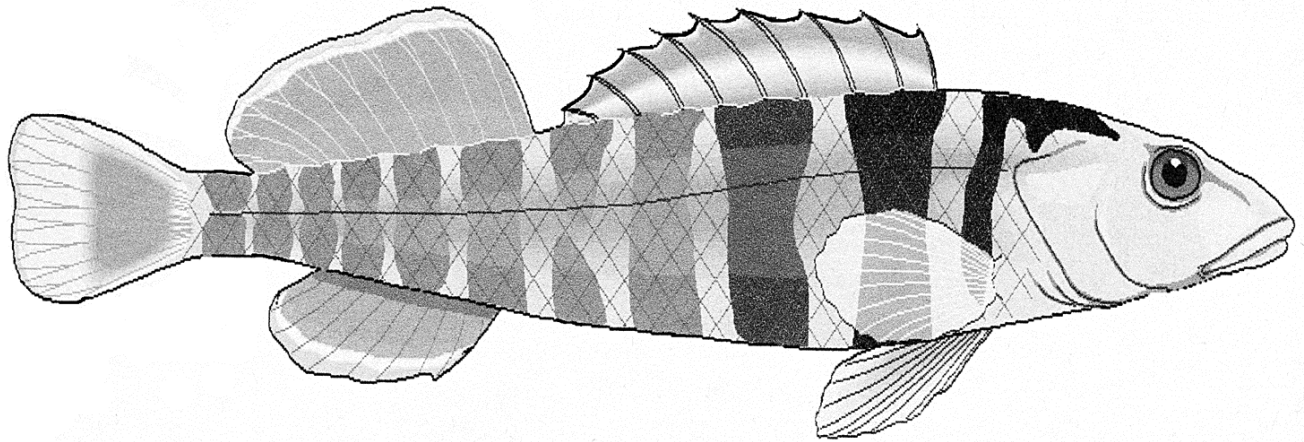


# *The Darter*

July - August 2013



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**St. Louis, Missouri**

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Join the all-new MASI FishHeads Forum. See web page for instructions.

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Opinions expressed by the contributors are their own and do not necessarily reflect the opinions of the Missouri Aquarium Society, Incorporated.

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# Places to Be / Things to See

SATURDAY August 3, 2013

Executive Council

Hosted by Debbie Sultan

SUNDAY August 11, 2013

MASI Summer Auction

Crowne Plaza Hotel

THURSDAY August 15, 2013

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

SATURDAY August 24, 2013

Executive Council

Hosted by Mike Hellweg

THURSDAY September 19, 2013

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

SATURDAY October 5, 2013

Swap Meet

Crowne Plaza Hotel

THURSDAY October 17, 2013

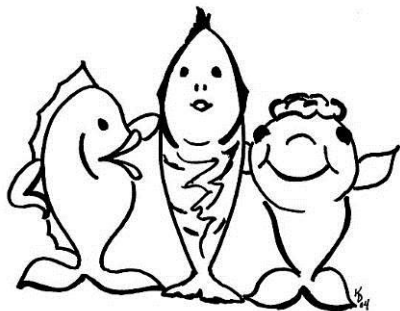
General Meeting, 7:30 PM @ Dorsett Village Baptist Church

THURSDAY November 15, 2013

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

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## *Membership*



Yearly membership in the Missouri Aquarium Society, Inc. is \$20 per calendar year for members receiving a paper copy of the Darter. Starting in 2013, it will only be \$15 for members electing to receive the Darter electronically. 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 Ron Huck, our membership chair.

# Everything You Always Wanted to Know about Being the Editor, but Were Afraid to Ask

Steve Deutsch

So unless you are new to the club, you probably know we are looking for our next editor. I am doing this through the end of the year, and then it is your turn.

There are many hands in creating the Darter. Authors and Committee Chairs provide reports and articles. The Exchange Editor provides exchange articles as needed for the balance of the Darter. Then the Editor puts it together and provides to the Printer. The Printer prints the Darter, the members assemble it at the meeting, and the Postman mails the copies that are not distributed at the meeting. So the editor's part of the process is receiving material, putting the Darter together, and sending it to the printer and the electronic recipients.

I have received all material except artwork electronically for several years. I have always said I will take printed material and enter it, but all authors now seem to have email. I do scan cover art and business cards for ads. I use the scanner on an all-in-one printer for this, nothing too fancy. If this is the only thing holding you back, tell the club you will be editor if they provide a scanner or get someone to do this – I'll bet it gets worked out.

Some articles come to me in MS Word, and some as plain text emails. I used to get some in MS Works but no one seems to use that now. I can import most formats and don't think about it much, but you could tell people what you can use. I get one report in Excel that I copy into Word. If I need to do anything with images, I do it in Photo Shop, which I am comfortable with. You can use other tools; all I usually do is adjust brightness and crop to the size I want, and there are many programs that do that.

I use a new version of Word, but save as the old style .doc format which seems to work well for printing. The newer versions of Word can save to a PDF directly, which is what I use to send to the people who want the Darter electronically. It does not work for our Printer, as it takes much longer for him to print that way than from a Word file, but I send the PDF along with the Word file to show how I laid out the pages, in case something needs to be adjusted.

It is important to work with the Printer, Charles Harrison, to come up with formats that print well. If I have a font he does not, Word will substitute something else that may not line up the same. We try to use limited color printing to control cost, but some things are better in color. The printer needs to know what should be in color, and will want to be sure the resolution of the images is high enough to print well. It took a little while for Charles to train me on what worked well for him to print, but now most issues work the first time. There are times he will have a question or need something changed, but they have become few. You will probably have things you want to change in the layout and appearance; just work with Charles to make sure it prints well. If you want to use something other than Word (like InDesign on an Apple) talk to Charles to see if it is something he can work with.

Typically I start with the previous Darter, keep the ads (unless I have a new one or instructions to remove one), keep the officers page, the masthead, and some of the title blocks. Then I put in all of the reports I have, and any articles from MASI members. Finally, I see how much space is left to fill and put in exchange articles. I have always tried to have a 32 page Darter. That isn't magic, and I have

gone 30 or 34 on a couple of occasions. When Steve Edie was Exchange Editor he gave me a couple of dozen articles to start with, and then provided more as I used them. I never had less than a dozen or so to choose from, I just had to say when I was running low. Now I am exchange editor as well as editor, so I select articles as I need them. Once I am done as editor, I will continue as exchange editor, and will provide an assortment of articles as Steve did, and more as needed, so there should always be enough material for a Darter, regardless of how many articles the members provide.

There are some details like printing a statement for the Post Office once a year on the periodical postage, printing a membership list once a year, etc. that you will learn as you go, but none are difficult.

When the Darter is complete, it is emailed to Charles to print, and to the electronic distribution list (members who request electronic copies, clubs we exchange with electronically, previous speakers, and so on). I maintain contacts and a distribution list in Outlook, but most mail programs have similar capability.

The Darter will come with its own email address on the club's domain, so anything sent to 'Editor' will automatically go to you instead of me, once Charles gives you the instructions on how to get the Editor mail. Some people send things to my private email, those I would just forward. The Darter also comes with a spot on Executive Council, so you can keep up to date on everything the club is doing and see what belongs in the Darter.

Usually I do very little until the two weeks before an issue is due, since I don't have the reports yet, and then put the Darter together spread across a few sessions. Much of the work could be done earlier if you desire, so it is spread out over more time and less at once. So, if you are reasonably comfortable with MS Office programs, use email, and can stand up and say "I need articles", you can handle this job.

## Aquascaping without Plants

By Mike Hellweg

Aquascapes don't need to have plants to be beautiful. Eye-catching displays can be designed to reflect the rocky habitats found in places like Lake Malawi or along the many rocky stream bottoms found around the world, a leaf litter swamp, a tangled snag of roots and logs, or anything you desire. Plants aren't required in any aquascape.

The main concern with using gravel and rocks in aquascapes is to avoid those with jagged edges or those with minerals or metals that might be harmful to your fish as they slowly leach into the water. The best way to get safe gravel and rocks for your tank is to buy them at your local fish store. They might be a bit more expensive, but you'll be sure they are safe for fish, and that peace of mind is worth a lot. While there, you can also find some very realistic looking artificial rocks that have caves already built into them. Rounded cobbles of mixed types and sizes scattered about look more natural to a stream environment, while more interesting formations or piles of similar stones look more natural in a lake setting, but it's your tank so chose whatever pleases your eye. Before using, rinse gravel well and scrub rocks with a scrub brush under running water to make sure all are good and clean. Rockscapes should be stable and laid out starting on the bare bottom of the tank so that the fish can't dig under them leading to a collapse later on. Carefully pour the gravel around after you've set up the rocks. They can be arranged in any way that looks good to you. If you want to create interesting features, use aquarium safe

silicone cement to glue them together. Let this dry for at least a few days before adding water to the tank.

Driftwood is another popular item for aquascaping. You can choose many different forms from branchy to blocky and everything in between. There are many natural woods that are safe to use in an aquarium. Here again it is best to buy your driftwood in a local fish store and get wood you know is already prepped and safe for fish. It only needs a rinse under running water before using. There are also myriad artificial wood decorations from which to choose. Driftwood looks more natural laying on its side or with the branches trailing downward, but the action of the current can do many bizarre things to a piece of wood and there really is no wrong way to display it.

Finally, you can add interest to the display with a pile of dead leaves, creating naturalistic and ever changing caves and hideaways for your fish. You can use almond, oak, beech or other similar leaves. Never use green leaves. Always pick dead leaves up from the ground in safe areas where no pesticides or fertilizers have been used. Soak them for several days in a tub until they sink, then rinse them and add them to the tank.

Many stunning aquascapes can be created without plants. You can create any sort of design that pleases your eye. It's your tank! There are no real rules. Your fish's safety and your imagination are the only limitations.

## Sponge Filters

By Mike Hellweg

Sponge filters have been around in one form or another for decades. They are easy to use, efficient, inexpensive, portable, reliable, and safe for even the smallest fry. Most aquarists with multiple tanks use them extensively or even exclusively. There are several commercial designs and many excellent home-made designs available that all work well. In addition, many power filters incorporate a sponge filter or two into their media mix.

All designs work on the same basic principal. Water is drawn through a sponge by a current created either by airflow or a power head. With the exception of the wall filter, sponge filters serve as a mechanical filter for particulate matter, removing all but the smallest debris from the water column. Once the particles are gathered on the sponge, they serve as a bacterial filter where aerobic bacteria break wastes down further. The huge surface area of the sponge provides a home for a variety of bacteria and the constant flow of water provides them plenty of oxygen.

The wall filter is a bit different. It covers a wall of the tank, creating a vast surface for bacteria, but does not remove much particulate matter from the tank due to the slow flow of water through the filter. This also means that it rarely needs to be cleaned.

The main drawback of sponge filters is that they do not remove any waste material but rather simply contain it, so they must be serviced regularly. This entails removing the filter from the aquarium and rinsing it while squeezing it under running water at 70° - 80° Fahrenheit. Run under the water for a few seconds, squeeze, and repeat until the water is mostly clear. Contrary to popular belief, running a sponge filter under the tap will not kill all bacteria on it. The brief exposure to chlorine/chloramine does not cause extensive or irreparable damage to the bacterial population. Some of the bacteria and most of the waste material are washed away, but the bacteria that are washed away are quickly replaced. A clean, healthy sponge filter should have a damp, earthy smell. If it smells bad (you'll know!), then it needs to be thoroughly cleaned and dried before reuse – and the tank should also receive a large water change because something is wrong.

If you have a prolonged power outage, remove the sponge from the water, rinse it as outlined above, and store it damp in a large fish bag full of air until the power comes back on. This will keep

most of the bacteria alive longer than if you were to leave it in the tank. Once the power comes back on, rinse it again and reinstall it in the tank.

Sponges can be moved from tank to tank, immediately creating a safe home and avoiding new tank syndrome. Many aquarists keep extra sponge filters running in some of their tanks for just such a situation. When setting up a new tank, simply move a mature sponge to the new tank and it is ready for fish.

Sponge filters are versatile and useful pieces of equipment that can make your job as an aquarist much easier. An investment in a sponge filter will provide you with many years of service.

## Reflections: Alien Invaders

By Ron Coleman

Reprinted from the March 2013 Cichlid Blues of the Pacific Coast Cichlid Association

I have just come back from my annual trip to Costa Rica – I typically go there between teaching semesters, meaning early January of each year. This year, it was a “strange” year for weather. Normally, one of the key pieces of equipment for working or even just traveling around Costa Rica is an umbrella. You never know when it will rain, but you can pretty much count on the fact that it will rain most days, at least a little. Not so this year.

Apparently in November and December of last year, it did not stop raining, but in three weeks starting in early January 2013, I only used my umbrella once. This has never happened before. Whether this is a sign of bigger changes in climate, i.e., global climate change, or just a one-time aberration we do not yet know, but the end result was that we got a look at some things which otherwise would not be possible. With so little rain, the forest rapidly starts to dry out. There is a tinge of brown to the leaves and more snap and crackle as you walk. Fewer frogs are about and with fewer frogs, you are likely to find fewer snakes hunting them. But in the rivers, a lack of water can be both a good thing and a bad thing. In some areas, it is definitely a bad thing: rivers dry up. They might dry up completely, or be reduced to a series of isolated pools. For some fish, this is very bad news. Other rivers drop in height, and hence velocity, and become clearer. This opens up some new possibilities.

As some of you know, I have been snorkeling in the Rio Puerto Viejo since 1989. It has never been a clear river and even at its best, visibility is often only a few feet, i.e., nothing like the 50 foot visibility on many coral reefs. In some years, visibility is much worse than that, and we almost have to feel the fish to find them. In the last four or five years, it has consistently been bad. This is partly a function of weather and probably also partly the product of human activities upstream, such as the dam, logging, agriculture and other practices that put more silt into the water. Last year, I could not go in the Rio Puerto Viejo at all, it was so high and silty. So this year, when we got to the La Selva Biological Station and I saw that the river was lower and distinctly clearer, I was excited at the opportunity of once again exploring my favorite place.

There is some great news. Because of an active anti-poaching program by the folks at the Biological Station, in conjunction with the wildlife authorities, the wolf cichlid or *dovii*, *Parachromis dovii*, is making a comeback. Costa Rica is taking an increasingly strong stand against poaching and illegal fishing. In fact, it just became the first country to completely ban all forms of sport hunting. And while fishing is still allowed, and an important part of the tourist economy, they are taking stronger steps to enforce areas where fishing is not allowed. The La Selva Biological Station is one such area. The effect on the *dovii* has been remarkable. I saw more adult *dovii* during this recent three week trip than I



had seen in all my years combined. And the fish were not afraid of people like they had been in years before. I was fortunate to see big males (15+ inches), not quite the huge males I had seen many years ago, one of which I measured with a ruler at 25" total length, but still big males. I saw young males and I saw adult females. I saw schools of young and I even found only the second *dovii* nest with eggs that I have ever found in that river! That was very exciting.

I also saw something that concerned me greatly. Back in 2008, the station naturalist Orlando Vargas started getting reports from fishermen in the area that they were catching a weird “monster” fish. This was quite unlike anything they had seen before. It did not have the sleek body of a cichlid, a tarpon or a bobo (a joturid), but rather had a wide flatish head, and a brown body almost encased in armor. They had started catching plecostomus catfish. The first reports of the plecos were from the Rio Sarapiquí, which is the larger river that the Rio Puerto Viejo runs into. It is almost always silty, home to many crocodiles and difficult to snorkel. Last year, we managed to snorkel the Rio Sarapiquí near the town of Chilamate. There we got a glimpse of our first invasive pleco. This pleco, most likely the “standard” plecostomus now known as *Hypostomus panamensis*, is not native to northern Costa Rica. It is native to the far south, along the Pacific slope of the country, just north of Panama. When they are present in an area, they are not too difficult to find.

First of all, they can be quite large, often 12 or more inches in length. Secondly, they make tell-tale caves in the river bank. These are often a few feet below the surface and easy to spot, because they are large and often in clusters. I do not know whether they are colonial, meaning that they like to tunnel next to each other for social reasons, or if the clusters merely reflect good substrate that attracts a bunch of individuals looking for the same thing. The bottom line, however, is of great concern. These tunnels are large (often a foot in diameter) and close together, and the net effect is that they greatly destabilize the bank. Over time, an area with these tunnels will likely collapse and then the process of tunneling deeper into the bank will start again. This can be very troublesome in ports and other areas with manmade structures that could be undercut. So, back to the Rio Puerto Viejo. Because the water was so clear, we managed to spend substantial time snorkeling this river. On one particular day, while swimming my usual route, a distance of about a half a mile or so, I saw 14 large (12"+) plecostomus! Interestingly, neither I nor anyone on my team saw any young ones. I have my suspicions as to why that might be... it MAY (still just a wild hypothesis) have to do with the increase in *dovii*. This remains to be tested. I also found them while night snorkeling, and this is where the potential danger lies because cichlids generally “sleep” at night, while plecostomus are active. Do the plecostomus affect the native cichlids? We do not know, but we are just starting a project to find that out. Stay tuned...

Are they just in the two local rivers? Sadly the answer is no. Orlando has received reports of the “monster” fish turning up all over northern Costa Rica. We found them as far away as the Rio Arenal, which drains Lake Arenal, far to the West. A friend, Jim Taylor, told me last week that they captured a baby pleco up in the rivers near Tortuguero. So the fish now spans the entire northern sector of the country, which is not surprising, given the interconnectedness of the rivers, i.e., they all ultimately flow into the Rio San Juan and out into the Caribbean.

How did they get there? Sadly the most likely explanation is that they were deposited by an aquarist. As with here, the common pleco is employed as an “algae” eater by aquarists in other places and while the aquarium hobby is small in Costa Rica, it does exist. It is also possible that the fish has moved naturally up from the south, but given the lack of aquatic connections between the southern and northern parts of the country, I am skeptical that the fish could move up so quickly, unassisted by man.

What will ultimately happen? We do not know. There are other alien invaders in Costa Rica. For instance, there are numerous tilapia farms all over the country, in which tilapia are raised in ponds, often right next to rivers. When the rains hit, these ponds flood and tilapia move into the rivers. In addition, baby tilapia disappear down drain pipes of the ponds and easily end up in the rivers below. So, while tilapia are around, and they are immediately recognizable as being different than the native cichlids – we have seen them in rivers from the far southeast to the far northwest, they do not seem to be taking over. They are present, they probably have some effects, but so far, they have not eliminated local fishes, in my experience. Exactly why, we do not know.

We were also shocked to find a dense patches of *Anacharis* (*Egeria densa*) in a few rivers, notably the Rio Isla Grande, a tributary to the Rio Puerto Viejo. *Anacharis* is one of the common aquarium plants sold in many pet stores. It looks very green, and it grows quickly so aquarists like it. Some fishes like it too, because it grows into dense mats that essentially cover a shallow river. This provides tremendous cover for some fishes, but may also make it much harder for their predators to find them. In some parts of the world, *Anacharis* is ubiquitous. We had never been in this particular stretch of the Rio Isla Grande, so we don't know whether this is a recent addition or not, but given that there are absolutely no aquatic plants other than algae in all of the rivers we have ever snorkeled in northeastern Costa Rica, the odds are pretty good that this is an alien invader. The source: once again, possibly the aquarium hobby.

The bottom line is this: the world has and always will change. There is nothing we can do about that. But, we need to be very careful about the things we do as aquarists such that we do not cause massive unwanted damage to natural ecosystems. Please be careful.

## Reflections: Three Interesting Fish Books

By Ron Coleman

Reprinted from the January 2013 Cichlid Blues of the Pacific Coast Cichlid Association

As the harsh California winter sets in (yeah, right), and the last filter is cleaned and all the water changes are done, you might fancy reading a book. Below are three books that you might consider, each rather different, and none of which are the typical guide to the fishes of someplace. These are different. Each is available in various formats and a little searching on the Internet will often reveal used copies at much reduced prices. For those who like ebooks, some are available in that format. All prices are approximate.

The first book is titled “**The Curious Death of Peter Artedi: A Mystery in the History of Science**” by Theodore Pietsch (Scott & Nix, Inc, New York) 2010. 222 pp. \$16

What a strange title? Indeed, this is a strange book. First you may ask, who is “Peter Artedi?” Well, he is often listed as the Father of Ichthyology (the study of fishes). He was briefly a contemporary of Carl Linnaeus, the man who gave us the modern system of naming things, e.g., Class, Family, Genus and Species. I emphasize the “briefly” part because while Artedi was a rising star in the early days of natural history and describing nature, he died a rather unexpected death by drowning in an Amsterdam canal, ostensibly after a night of drinking. The plot thickens. You see Artedi and Linnaeus were companions and rivals, both with exciting new discoveries and theories about the natural world. As they worked feverishly in the early 1700s, Linnaeus laid claim to deciphering the plants and most of the animals, while Artedi focused on studying fishes. Linnaeus was very competitive. Just as Artedi was about to publish his major works, he ended up dead in a canal. Hmmm... Interesting coincidence?

The book is masterfully written by Theodore Pietsch who writes it as if it were an autobiography by Carl Linneaus. This book is not entirely fiction. Linneaus wrote five autobiographies (of himself) which gave Pietsch lots of material to work with but it also gives you a hint that Linneaus had rather high opinions of his own worth in the world. For instance, Linneaus actually wrote this about himself “He [The Lord] hath given me greater knowledge of natural history than any one hitherto acquired. No person has ever proved himself a greater botanist or zoologist. No person has ever written more works in a more precise and methodical manner, and from his own observation. No person has ever so completely reformed a whole science, and created therein a new era.” A rather modest chap if he does say so himself! Spoiler alert: this book is mostly about Linneaus, partly because there is precious little known about Artedi, but it weaves the threads of Artedi’s life into the intricate fabric of Linneaus’s world and is a wonderful journey back into a time when things we now regard as basic knowledge were just being discovered. For example, Linneaus is the guy who figured out that flowers are how plants have sex. It seems a bit obvious now, but not so back then.

For those of you who lament the latest name changes for our beloved cichlids, realize that back in the day, there were no rules about how to name plants or animals. In fact, different people often had different names for the same thing, and some of those names were actually long descriptive sentences of many words. Imagine writing that on your fish tanks or placing an order on Aquabid! This was also a time when there were no professional scientists. Basically, anyone who studied ichthyology, or botany or any of the other organisms, paid their bills by being a medical doctor. Even things that we take for granted now, like natural history museums, did not exist; specimens of plants and animals principally resided in private collections. The book is a time portal to a different way of doing things.

There are lots of parts of the book to like. Everyone will have their favorite. Mine, given my work as a professor, is where “Linneaus” (technically T. Pietsch) talks about all of the graduate students that he sacrificed in pursuit of science. I don’t mean “sacrificed” figuratively, I mean he literally sent them to die. Back in the day, exploration of unknown lands was serious business and quite a bit more hazardous than having your luggage lost by the airlines. He writes: “And finally, I might include in this list of tragedies, Anders Berlin, who, while collecting for me in Senegal in 1773, and before there was any chance to send to his teacher the objects of his labors [i.e., plant specimens], was attacked and hacked to death at a tender age of 27 by the local inhabitants of that strange and wild country.” Now that is some serious collecting -- take that Heiko!

The second book is titled “**The Cichlid Fishes: Nature’s Grand Experiment in Evolution**” by George Barlow (Perseus Books, New York). 2000. 335 pp. \$12

Those of you who have been members of the PCCA for close to a decade or more will remember George. For several years toward the end of his life, George attended our meetings. As Professor of Ichthyology and Animal Behavior at UC Berkeley from the 1960s until just a few years ago, George was responsible for much of the cichlid hobby and what we know about cichlids. His early students included people like Paul Loiselle and the ranks of academia are filled with his students and his student’s students. He was one of the founders of the ACA (American Cichlid Association). Above all, George loved fish and particularly fish behavior. Even in his later years, after he retired and he could no longer perform many experiments, he used to love to design new experiments to test new ideas. Once-a-month I would pick up George and bring him to the PCCA meeting, and these trips were very important to George; it was his chance to share his enthusiasm for his beloved fishes and to spend time with people with the same addiction.

George's book is a summary of everything cichlid. As befits George, the book is well-written. It is a summary because I can tell you that the earlier drafts of the book were substantially longer, not because they were wordy – George was a fine writer, crafted from many years serving as an Editor of various scientific journals – but because George had so much that he wanted to say. Unfortunately the realities of the publishing world demanded a shorter book, but you still get over 300 pages of George's insights into the world of cichlids.

The final book is “**Darwin's Dreampond: Drama in Lake Victoria**” by Tijs Goldschmidt (MIT Press, Cambridge, Massachusetts). 1996. 274 pp. \$29

Tijs was part of the team sent by Professor Barel of the University of Leiden to study cichlids in Lake Victoria in the early 1980s. The goal of this work was to update what had been started by Dr. Humphrey Greenwood, Curator of Fishes at the Museum of Natural History in London back in the 1950s. From Greenwood's work and others, it was known that Lake Victoria had an astonishing variety of unique cichlids but it was also known that Greenwood had worked mostly on the Ugandan side of the lake, and there was much more to discover elsewhere. In fact, the group from Leiden discovered over a hundred and fifty new species which was almost too much to handle. Such riches can become a problem, knowing that each possible new species initiated a tremendous amount of work to formally describe it, etc. In fact, Tijs writes that it became so overwhelming that at one point “I myself once caught an unnamed, exceedingly lively, fiery-tempered male with purple flanks and a pitch-black mask but then let him go because at the time I couldn't face discovering another new species. I don't think it was ever caught again!”

But then it all changed. Nile perch had been introduced into Lake Victoria years before and at first the effects were not apparent. But a fully grown Nile perch can be 70 kilograms or more, and that has to cause some ripples in an ecosystem. “Darwin's Dreampond” is the story of how those ripples changed to waves and ultimately to a catastrophic storm as told by someone who was actually there.

## Feral Fish: I Never!

By Carol Sindelar

Reprinted from the February 2013 Fin Flap of the Eastern Iowa Aquarium Association

Feral Fish - that really got my attention when I was bouncing around the internet tracking down some background on an article I had spotted about Jack Dempsey Cichlids surviving and reproducing in the wild in “South Dakota”. Feral Fish, just like the cats that have invaded the neighborhoods since the flood of 2008. My first reaction was, ‘no way’. Especially as I sit here in the dead of winter, one state to the east, awaiting an ice storm that is coming out of - - South Dakota. South Dakota gets cold in winter with a capital C. No way could South American cichlids survive in South Dakota. Goodness, I barely survive in this weather. But Amazonas magazine and ActivistAngler.com both point to reports from South Dakota Game, Fish and Parks that Jack Dempseys are indeed reproducing in the Fall River in South Dakota.

Why? How? Because the river has hot springs that keep the year round temperature at 70 degrees or above. AND. This is an important and. AND - - irresponsible aquarium hobbyists toss their unwanted Jack Dempseys into the river hoping they will die in the cold winter. Die fish die! But they forget about the water temperatures due to the hot springs. 70 degrees and above year round is just what them Dempsey love. And of course they reproduce. Yikes.

They have no proof, no physical evidence; nothing our favorite investigator Abby Sciuto (NCIS) could track down to tie the hobbyists to this crime. So it falls into that circumstantial evidence area.

1. The Jack Dempsey could not walk there from South America on their own
2. Local hobbyists often buy/keep/have Jack Dempseys, even in South Dakota.
3. Jack Dempsey reproduce more fry that any one hobbyist can find homes for
4. There are no non-profit organizations promoting adoption of homeless Jack Dempseys
5. No one is campaigning to spay and neuter your Jack Dempseys

And it looks like it has been going on for some time. SDGF&P reported sightings of Jack Dempsey in 2009 and now they are seeing multiple-year classes; meaning, fish in one area one, two, three, etc, years old. Them fishies is reproducing.

What I, little old me in Iowa, would like to see is this:

1. Could shop owners please advise newbie hobbyists that many of the large South American cichlids reproduce in large numbers and there is not a market for them in large numbers. They are not going to be rich because the fish spawned.
2. That the shop is not going to buy back all 1000 babies when they spawn. Nor are they going to buy back the big one that is left after it killed all the other fish in the tank.
3. Could hobbyists, newbies or not, please research their fish before they purchase them.
4. Could writers write more about ways in which the hobby or a species can get away from you, in your own tanks.
5. And finally, Hobbyists, don't throw the fish, plants, snails, crawdads, etc, into the local waterways. Just don't!

I will end by telling the story of how we came to have some really prime pond Koi. A teacher witnessed a hobbyist emptying 10 of their 12" Koi into a local creek. The (biology) teacher rescued them and brought them to school and told anyone who would listen of the event and asked if anyone could take them home. A teacher friend of ours heard the tale and called to ask if we had room in our pond. Which we did not but we were willing to fill a tub and find homes. They were beautiful Koi. I am guessing expensive. This was a situation I often hear about in the pond hobby, they were too big for the persons little pond. No one told them cute little 4 inch Koi get to be 18 inches in just a few years.

Feral fish: that is an interesting phrase. And I like it because it brings my thinking straight to annoying feral cats. Feral fish: just as annoying and just as dangerous to the environment

# Tropheus Duboisi

By Bruce Hart

Reprinted from the November & December 2012 Aqua Antics of the Sarnia Aquarium Society

After keeping and breeding all kinds of fish for 20 years, including many cichlids, I felt I was ready for the challenge of keeping Tropheus. I had heard that of the Tropheus species, the duboisi were the easier to maintain. Now that I have some experience with this fish, I can say there is nothing easy about it. The first group of fish I picked up consisted of a dozen fry with their typical black body adorned with white spots over the sides. I was aware that Tropheus are vegetarians and I purchased a specific veggie flake food for them. They adapted to their new home in a 40 gallon tank and were eating well. I thought I would give them a treat of a few bloodworms one day with the disastrous result that most of the fish became sick, stopped eating, and died in a few days. The lesson was learned; never vary from the vegetarian diet. I also feed romaine lettuce on a regular basis which they devour heartily.

I replaced the lost fish with more from my original source; that being Wet Thumb Aquatics in New Baltimore, Michigan. The colony progressed well and I eventually moved them into a 120 gallon tank. I also placed some rainbow fish and some denisoni barbs in the tank which act as dither fish and reduce aggression between the Tropheus. The tank also had a collection of small plecos which I felt would do well also on a veggie diet, and perhaps help keep the tank cleaner. Indeed, a pair of bristlenose plecos spawned several times in the tank.

Over time the juveniles matured and developed the adult colour pattern. This is generally a black body, bluish head, with a yellow vertical band extending from the dorsal to ventral body, just behind the gills. Males tend to grow quicker, so adapt the adult colouration sooner. Colouration in both adult sexes is identical, although males which are courting most of the time may show more intense colouration. It is not easy to sex the fish by appearance, but dominant males will defend a territory and can be spotted this way. When breeding started within the colony, I found it difficult to spot the females that were holding. Unlike most other mouthbrooding cichlids I have kept, the female Tropheus holding eggs continues to feed. My fish did not seem to have large clutches, so the look of an extended pouch in the mouth was not obvious. What I did learn to identify was the different position the females would hold when eating, with their body tilted and their heads in a downward position.

When I noticed a female holding for more than a week I would try to net her out of the tank and flush out the contents. I have usually found between 3 and 8 eggs or fry. The eggs will take 24-28 days to hatch in the mouth, but I usually am never sure of the timing of the spawning. If I find eggs, I use a bubbler to hatch them out. If I am lucky and catch them at the right time, I am rewarded with healthy free swimming fry which are ready to eat. I have never raised a complete batch of eggs or fry to juveniles, always losing some along the way. After many spawnings I have been able to supplement my colony numbers, replacing some losses of the original adults I started with. One time I noticed two fry that were darting between the rocks in the tank that obviously were incubated successfully by a female and released without my intervention. It was October 2009 when I first purchased these fish. Nearly three years later I am still enjoying the challenge of keeping these fish and still learning more.

# Breeding Cherry Barbs

by Ken Seiders

Reprinted from the May 2013 Fish Talk of the Atlanta Area Aquarium Association

Cherry Barbs are so common, that I don't believe I have ever been in an aquarium store that did not have some for sale. They are perhaps the perfect example of a "bread and butter" fish. They are peaceful, they stay small (around 2"), and they get along with every other fish. While I understand they will happily survive and breed in a variety of water conditions, I keep mine in plain old Stone Mountain tap water. The water is usually slightly below neutral, as the tanks in which I kept and bred my Cherry Barbs had no cO2 injected. I change the water once a week, anywhere from 30% to 90% of the water. Since I kept them in a 10 gallon tank, it was so easy to change the water, I often changed 90% of the water each week. While the fish were in the breeding tank, they enjoyed the company of an Anubias plant, and a mat of java fern, about 10 inches square. A few Amazon Frogbit floated along the top.

For filtration, the 10 gallon tank has a sponge filter, and a hang on the back Marineland Penguin 100 with a bio wheel. I had a heater in the tank (it was during the winter) and kept the water at 78 – 80° F. When I fed the fish, I turned off the electric strip that controlled the Penguin filters and the heaters. I also turned the Penguin filters and the heaters off when I performed water changes.

If you have read any of my previous articles on breeding fish (or Dave's great article about the Serpae Tetras he bred), you know that I outfit the 10 gallon tank with plastic canvas (available at most any arts and crafts store) covering the bottom of the tank about an inch off the bottom, supported by a frame of pvc pipe. That is the same setup I used for this tank. The java moss and Anubias were on top of the plastic canvas.

Into this tank I placed the Cherry Barbs I got from a club member at the June 2012 meeting. There were originally 8 fish, but over time, 2 of them died. Unfortunately, that left me with 6 females. The females were living in this tank, well fed and tended. When I finally had time to breed them, I bought some males from a pet store. I kept them in a quarantine tank for at least 4 weeks. They had to both be disease free, and mature a bit. I have bought Cherry Barbs at a store before, but they died from ich. I did not want to possibly infect my females, who by this time were the fattest, happiest female cherry barbs I have ever seen. In addition, many times the fish you get at the stores are not quite mature, and a few weeks of good feeding and quarantine will get them ready to breed.

Finally, it seemed that I had time to breed them in February. Since the females were so fat and happy, I just assumed that when I put the males in the tank (who were a bright red by now, and obviously ready for breeding) they would begin breeding at once. So Friday night, I put two males in the tank with the 6 females. I turned off the Penguin 100 filter, so the water would be more still, and if eggs were laid, they would not be tossed about the tank. The instant breeding frenzy did not take place. The 2 males made themselves a depression in the middle of the java moss clump, and just sat there. The females moved away from the java moss, and congregated under the Anubias. When I checked on them Saturday morning, I did not see any evidence that they had bred. The males were still, mostly, in their depression, while the females continued to congregate under the Anubias. Since fish I have bred in the past have bred the first night, I was not sure what to do with these fish, since I didn't see any evidence they had bred. Recently, I bred Red Eyed Tetras, but I did not know they had bred until I saw fairly large fry in the tank. So, I did something different than all the other times I have bred fish using this method.

I left the parent fish in the tank! It usually takes 2 or 3 days for any eggs to hatch, so I figured if I left the parents in the tank for another day, it couldn't hurt. I watched them during the day on Saturday, as some fish I have bred in the past have bred later in the day. But I saw no spawning activity. Occasionally a female would go visit the male, but since they were in the middle of the java moss, I could not see any actual spawning. So I left them in the tank another day. While I watched them during the day on Sunday, still I saw no spawning activity. Remembering that I had never seen any spawning activity from the Red Eye Tetras (or from these Barbs), I left the parent Cherry Barbs in the tank one more night.

On Monday night, I took the parents out of the tank. I figured if they had laid eggs somewhere along the way, even as early as the first night, the eggs would start hatching soon, and the parents did not need to be in the tank when that happened. If they hadn't laid eggs, then I would put them in the tank again in the future for another spawning attempt. I put the parents in an available community tank, as they are so peaceful and really didn't bother any other fish. Then the wait began.

I didn't know if they had actually laid eggs or not, so I wasn't sure if there would be any fry or not. I did not change the water or clean the filter while waiting to see if there were fry. I just spent time peering into the tank, looking for any signs of fry. On Wednesday, I did see some fry in the tank. So they had laid eggs! Now, as is usually the case, I try to count the fry to be sure there are enough for submission for BAP points. That is one of the most fun things of belonging to AAAA, you breed some fish, and get these great plaques to hang prominently in a place of honor. Honestly, how many people in the country have an AAAA BAP plaque?

The rest of the story is the same as breeding any other tetra. The fish are very small, needing very small food to begin feeding. Since the tank they are in had the parents for quite a while, and since it had java moss, there were little thingies swimming in the tank. The fry eat these almost immediately, but there are probably not enough for all the fry. I usually use liquid fry food as a first food, then a few days later begin feeding micro worms. The Cherry Barb fry were so big (compared to other fish) that they were able to begin eating micro worms on the second and third day after they were free swimming. Other than that, they grew about the same as any other fish. After about 2 weeks, red began appearing on the dorsal and caudal fins. Both males and females have red fins, so they couldn't be sexed yet, but finally began to look more like Cherry Barbs than any other fish. When they were about 4 weeks old, I had to leave town for 10 days. During that time, I had someone feed the fish on two occasions. I put the food two containers, which were fed on Tuesday and Friday of that week. When I returned from my excursion, the fish were all alive and swimming. They were much thinner, but a few days of baby brine shrimp, micro worms and frozen cyclops brought them back up to their fat little happy selves. That was the first time I thought to myself these fish were easy to breed and raise. That is probably the reason they are priced so low in the stores, as they are so easy to breed and raise.

I did a water change after the first two weeks of the fish swimming freely, then continued to change the water once a week, usually around 90%. I replaced the water in the tank with the same temperature tap water, to which Prime had been added to remove the ammonia and chlorine. They thrived. They ate anything I put into the tank. Frozen cyclops, frozen baby brine shrimp, fresh baby brine shrimp, micro worms and of course flake food.

If you want to enter the exciting world of fish breeding, let me say that these fish are ones that come highly recommended. They truly are easy to breed, easy to raise, and can be considered a community fish of the highest caliber. Plus, they are available everywhere, so breeding stock is easy to get.



# Editor's Notes

Steve Deutsch

Well, after this I have two issues to go to complete my ten year term as editor. Who wants to be next? I have put a job description elsewhere in this issue for those who might be interested. Remember that the editor is appointed by the president, so be sure to tell Pat you are volunteering.

Mike Hellweg gave me a few short articles early in the year, the last of which are in this issue. Gary Lange has been more active at the keyboard lately, and has another articles in this issue. Ed Millinger also has one. The rest of the Darter is reports (those that I have) and Exchange Articles. I will stay on as Exchange Editor, so let me know what topics I should be looking for articles to cover.

I try to cover a wide range of topics, so we have two exchange articles on fish, two on introduced species, a book review, and a puzzle. Normally I would have not picked two on introduced species, but found the South Dakota cichlid population too interesting to pass up.

I tend to fall behind on listing reprints of MASI authors, but will try to do better when that is my only job. For this month, Mike Hellweg's article on Making a Simple Spawning Grate was published in the June 2013 Fin Flap of the Eastern Iowa Aquarium Association.

Remaining deadlines for this year are August 15<sup>th</sup> and October 15<sup>th</sup>. Deadlines after that will be set by the new editor.

Oh, by the way, did I happen to mention that

We Need a  
New Editor for  
2014?

# Words of Reproduction

Reprinted from the November & December 2012 Aqua Antics of the Samia Aquarium Society

G N I D E E R B T H O X Y E X S I B P L  
G X E L C X T C L N K V Z E U Q O E A A  
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R N S P A I R Q O J E X K O L L L S O T

**AGGRESSIVE**

**BEARERS**

**BEHAVIOUR**

**BREEDING**

**EGGS**

**ENVIRONMENT**

**FEMALE**

**FRY**

**ISOLATE**

**LAYING**

**LIVE**

**MALE**

**MATE**

**NATURAL**

**OFFSPRING**

**OVIPAROUS**

**PAIR**

**PARENTS**

**REPRODUCTION**

**SPAWNING**

**TERRITORIAL**

**TRIGGER**

**VIVIPAROUS**

# Club Hopping 2013

Steve Edie

More dates will be added as clubs firm up their plans.

July 13 – Urbana, IL: Champaign Area Fish Exchange Summer Auction

July 18-21 – Denver: American Cichlid Association Convention

Aug 11 – St Louis: Missouri Aquarium Society Summer Auction

Sept 19 – Everywhere: Talk like a Pirate Day

Oct 5 – St Louis: Missouri Aquarium Society Swap Meet

Oct 10-14 – New Jersey: North Jersey Aquarium Society – 60th Anniversary Weekend

Nov 10 – St Louis: Missouri Aquarium Society Fall Auction

Nov 17 - Indianapolis: Circle City Aquarium Club – Fall Auction

Nov 22-24 – Cleveland: Ohio Cichlid Association – Extravaganza

Check with the individual clubs for more details.

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## Electronic Distribution Now Available

For those who prefer, the Darter is now available electronically, instead of the paper distribution. To change from paper to electronic distribution, email me at [editor@missouriaquariumsociety.com](mailto:editor@missouriaquariumsociety.com). You will get your Darter sooner and the club will save printing and postage. And, starting in 2013, you will save \$5 on your membership.



An expanded line of MASI Logo merchandise is now available from Café Press. Derek Walker has picked up management of the site and added many new items. Pick from T-shirts, jerseys, caps, tote bags, coffee cups, and more.

Go to [www.cafepress.com/MissouriAquariumSociety](http://www.cafepress.com/MissouriAquariumSociety) to view and order the merchandise.

# From The Fish Room

By Ed Millinger

I recently was looking for another live food source for my tropical fish and decided on red wigglers. I purchased some from Uncle Jim's Worm Farm. I bought 500, which cost less than \$25 with shipping. They come with great instructions and after six weeks I started harvesting them. (Don't be surprised at how they look when you receive them, they will bounce back into shape). I use an old pair of scissors to cut them to size depending on which fish I feed them to. For more information on their care see page 115 of *Culturing Live Foods* by Mike Hellweg.

For a Valentines day gift by wife bought two behind the scene tours of the World Aquarium at the City Museum. Many of the animals and fish have been rescued. There are quite a few turtles, snakes and "Mr. Crackers" an armadillo (feeding him is the final stop and one of the best, he gobbles meal worms like you wouldn't believe). Unfortunately pet shops are still selling pacus because when they outgrow the owners tanks the City Museum is about the only place that will accept them. They must have had at least twenty of them in their large South American exhibit. My favorite part of the tour was feeding the saltwater stingrays. You are handed a small feeder fish which you dangle on the side and these large rays are coaxed into coming up and eating them. You simply release the bait and then pet them.

Speaking of feeding fish, if you ever have the opportunity to visit Jim Miller's (Jr.) fish room, ask him to feed the tank with African cichlids and catfish. Ron Huck and I were there a few weeks ago and while Jim was a good five to six feet away, as soon as he picked up a large container of spirulina flakes every fish went crazy. The frenzy increased as he walked closer to the tank and all heck broke loose when the food hit the surface.

This issues MASI way back machine travels to May/June 1993. The cover presented the winning design for MASI's new T-shirt. The design was a combination of two submitted by Jack Berhorst and Sue Ferrario, the artwork was done by Jim Lovins. The 1993 show results were published, Larry Allbright took best in show with a red hifin Lyretail sword, judges award went to Kayvon Ashrafzadeh for his mini-pond, some guy named Jim Miller (Jr.) won best catfish with *Ancistrus lineolatus*, and Rich Crabtree won best cichlid and people's choice with a *Haplochromis ahli*. Jim and Brenda Thale took home the best guppy award. Chris Frillman wrote an article about Buck and Junior his two red tailed catfish, they were not always getting into something, other fish were always getting into them! Jim Lovins presented his part two of *Beneath The Rainforest*, Mike Hellweg wrote about *Corydoras aeneus*, and there was an ad for the '93 ACA convention to be held in Minnesota..

## Sprouting *Barclaya longifolia* (*Hydrostemma longifolium*) Seeds

By Gary Lange

I've had a wonderful *Barclaya longifolia* plant in my 210 gallon aquarium now for some six plus years. The name of this name has recently been changed back to *Hydrostemma longifolium* but it will take me a while to start referring to this plant as my *Hydrostemma*, so for now I'll continue to call it my *Barclaya*. I love the rich red colors and have always wondered whether the small plants that pop up near the mother plant were merely vegetative reproduction or whether they came from the seed pods that were so abundantly produced with my plant. Since the root system spread out at least twelve inches under the plant I would really be suspicious that any plants within that range could actually be from

seeds. As a scientist the way I see it the only way to prove they really are sprouting from seeds is to remove them and grow them in another environment. And that is what I set out to prove with my experiment.

During a “cycle” my *Barclaya* might put up 20 seed pods before it goes semi-dormant. These seed pods as they develop really swell to almost twice their original size. When the stem finally rots and the pods fall off they usually fall close to the parent plant. Eventually the seed pods burst open as the whitish almost cotton candy like material between the seeds pushes open the outer walls of the seed container. Fish, especially rainbowfish seem to enjoy this white material and I wonder somehow if they don’t inadvertently swallow some seeds in the process. The individual seeds look rather sinister with their pointy spikes and don’t seem like they would be very edible though. As you can see from the photograph the seeds are quite small only about 1.5 mm in diameter (less than 1/16<sup>th</sup> of an inch). I collected several seed pods and removed the “white stuff” keeping only the seeds. I placed them on top of a white sand substrate, added some water, put a clear lid on the container and then placed them under T-8 (medium) lighting. I have repeated this several times with and without a clear lid on the container and what had usually happened was the container got so full of algae that the seeds just rotted. For whatever reason the seeds just didn’t seem to sprout. Information on the Internet suggests that when people “think” their seeds sprout it’s usually many months after they see the pods form and then drop to the substrate. The thinking is that it takes months and months, not unlike so many of those South American annual killifish eggs to finally hatch/sprout and flourish.

On my last experiment I also buried one of the seed pods and also left one on the sand surface just to see if it made a difference. I also took a second group of seeds, only about 40 and placed them into a small clear scientific container called a “T-flask” with no sand about 20 ml of water and incubated them under a rather intense 20 watt LED fixture. What was my reasoning for this and why did I think it could make a difference?

Several years ago I had the pleasure to hear Karen Randall speak about her adventures collecting plants in Thailand. She showed a photo in a stream of something she and Christel Kasselmann thought was a new aquatic plant. At least they thought that for a few minutes until they sorted out it’s real identity. It turned out to be hundreds of tiny plants bursting out of a *Barclaya longifolia* seed pod! How could this be when what we’ve experienced in our aquarium was that it takes months for these seeds to germinate? Did we have defective plants or was there something else going on here? Now I set my experiments up in early January and FINALLY in early May noticed that a subset of seeds had finally sprouted. In the group of seeds that were under T-8 (medium lighting) there were only three seeds out of several hundred that had germinated. In the sealed T-flask almost all of the seeds had germinated and some already had tiny red leaves. Although I can’t measure the light differences between the two groups of seeds I would suggest that the seeds under the LED lights were at least 4x brighter than the T-8 light. They were very much closer to the source (within one inch of the LED’s) and they were also perhaps a few degrees warmer than the T-8 incubated seeds. Even with this very bright light it still took four months for the seeds to germinate. There is no way that any seed pod would still be intact for months in a stream. It would have exploded and the seeds long scattered down the stream bed. So there seems to be something in that environment that is lacking in our aquarium that induces rapid germination. The one experiment that now seems obvious is that I need some natural, unfiltered sunlight so that I could perhaps get some UV rays to my tiny seeds. Although I don’t have any new seedpods to take outside I can try the next best thing and try one of the ZooMed ReptiSun lights (10 UVB), a power compact twist light that emits both UV A and UV B rays and see if it helps to germinate any of the seeds that are still dormant. I’ve now set up the remaining seeds under the UV emitting light and have left the containers uncovered to avoid filtering out any of the UV rays. Even if the seeds start quickly germinating I know I’ll have to go

back and repeat the experiment with freshly picked seed pods and show that the UV light is what makes the difference. But for now it poses an interesting question and hopefully I can “hatch” all of these little alien seed balls!

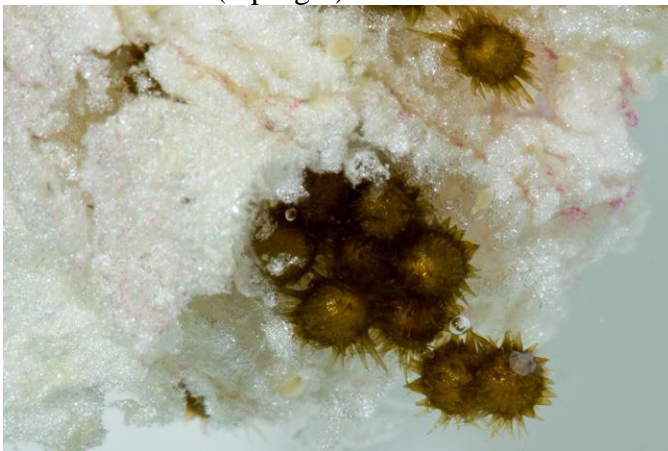
### Experiments With Germination of *Barclaya longifolia* (*Hydrostemma longifolium*) Seeds



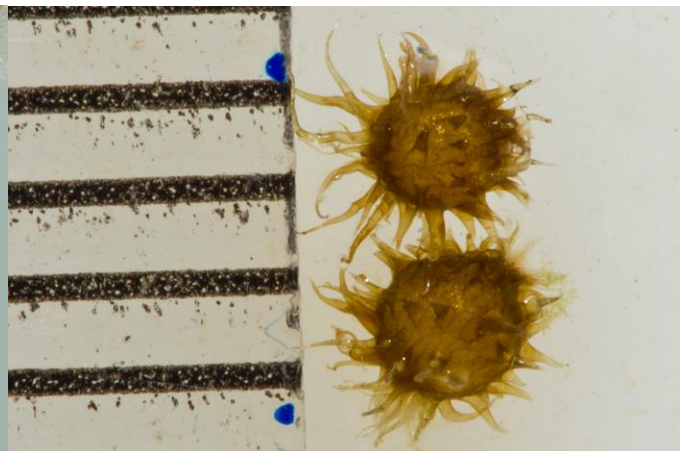
*Barclaya longifolia* (*Hydrostemma longifolium*)  
With Seed Pods (top right)



Seed Pod That Had Just Burst Open



Closeup of Seeds and White Material



Measurement of 2 Seeds



Germinated 4 Months Under LED's



Incubated 4 Months Under T8 Lights

# HAP Report May - June 2013

Mike Hellweg

Welcome to Evan Wright, who has started off his participation in the HAP with 10 species, including a MASI First! Also, three other new HAP participants, Dwayne Peters, Nick Scarlatis and Cory Koch, continue participate actively. Great going guys!

I should note that over the past several years Evan and several others have submitted *Hemianthus micranthemoides*. Like many of our fish, the name has changed - way back in 1867! The Missouri Botanical Garden Tropicos database has been created to clear up confusion like this as they slowly expand to include more and more scientific literature. This plant was first described by Thomas Nuttall in 1817 in the Journal of the Academy of Natural Sciences of Philadelphia. In 1867 Asa Gray moved it to the genus *Micranthemum* with the specific name of *nutallii* to honor Mr. Nuttall in his *A Manual of Botany of the Northern United States*. And yes, for those of you who don't know, it is a native US species - found in the coastal US in Delaware and North Carolina. Much of the year it grows emerse along the banks of streams and rivers. Until someone else moves it again, *Hemianthus micranthemoides* should be more correctly known as *Micranthemum nuttallii*.

Member	Species	Common	Rep	Pts	Total
Mike Hellweg	Ludwigia linearis*	Narrow Leaf Primrose Willow	V	10	3205
Mike Hellweg	Nymphoides sp. pale green		V	20	3225
Mike Hellweg	Potamogeton foliosus*	Carolina Leafy Pondweed	V	10	3235
Nick Scarlatis	Bacopa caroliniana	Common Bacopa	V	10	70
Nick Scarlatis	Cabomba caroliniana pulcherrima	Purple Cabomba	V	10	80
Nick Scarlatis	Ceratopteris thalictroides	Water Sprite	V	5	85
Nick Scarlatis	Ludwigia repens	Red Ludwigia	V	10	95
Cory Koch	Aponogeton boivinianus		IB	10	80
Dwayne Peters	Anubias barteri nana	Dwarf Anubias	IB	20	145
Dwayne Peters	Bacopa caroliniana	Common Bacopa	V	10	155
Dwayne Peters	Cabomba caroliniana	Fanwort	V	10	165
Gary Lange	Aponogeton longiplumulosus		IB	10	1380
Gary Lange	Aponogeton madagascariensis	Madagascar Lace Plant	IB	20	1400
Gary Lange	Egeria najas	Curly Leaf Anacharis	OB	5	1405
Gary Lange	Hydrostemma longifolium	Barclaya	S	20	1435
Gary Lange	Najas 1440	sp. roraima	Spiny Naiad	V	5
Gary Lange	Crinum IB	calamistratum 20 1460			Waffle Leaf Bog Lily
Gary Lange Plant	Lindernia IB	rotundifolia 15 1475	variegated		Watermelon

Holly Paoni Wise/

Kevin Wise	Anubias barteri nana	Dwarf Anubias	V	15	15
Holly Paoni Wise/ Kevin Wise	Egeria densa	Anacharis	V	5	20
Holly Paoni Wise/ Kevin Wise	Microsorium pteropus	Java Fern	V	10	30
Holly Paoni Wise/ Kevin Wise	Spirodela polyrhiza	Giant Duckweed	V	5	35
Holly Paoni Wise/ Kevin Wise	Utricularia vulgaris	Bladderwort	V	5	40

Reproduction Key: V = Vegetative, OB = Outdoor Bloom, IB = Indoor Bloom, S = Seedling  
 \* = MASI First

# Auction Chairman's Message

Mike Hellweg

Hello all,

Our next auction is coming up quick! August 11, 2013 is just around the corner. We'll need volunteers to help out with check in and helping sellers get their items unloaded around 9:30 am. Rumor has it there will be a pizza party for the workers after the auction ends.

Our raffle tank will be a 55 gallon tank, top and light once again supplied by the folks at Tropical World Pets. We'll also have a plant donation from Florida Aquatic Nurseries AND a fish donation from Imperial Tropical Fish Farm and possibly another FFTFA member. This will be an opportunity for these farms to show off some of their newest strains, and for our buyers to have a chance to get some of the newest fish and plants before they even make it to the local shops.

Please let the folks at TWP and all of our other supporters know how much you appreciate their support!

Our Credit Card experiment went very well and this option was very well received by our members. So we have decided that we will be allowing our buyers to use Credit Cards at all of our auctions.

Finally, there have been a couple requests for us to allow vendor tables at the auctions. The Executive Council discussed this at the May meeting. We will NOT be allowing vendor sales at our auctions. Our auctions are MASI's primary source of operational income. The club's split from the auctions keeps the club running throughout the year and if we were to cut into that, we wouldn't be able to bring in some of the speakers we have lined up for the coming year, nor would we be able to do many of the other things we do throughout the year.

I hope we see all of you at the next auction, August 11, 2013.

And for now, 'nuff said  
 Mike  
[auction@missouriaquariumsociety.com](mailto:auction@missouriaquariumsociety.com)



# The Computer Page

Steve Deutsch

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

MASI's email group: MASIFishHeads Yahoo Group - see web site for joining instructions

Addresses are only printed with permission of the owner. If you would yours added, please email me at [steve@skdeu.com](mailto:steve@skdeu.com). If you would like yours removed, or if it needs correction, also please email me.

## MASI MEMBERS E-Mail Addresses:

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Steven Hoffman	<a href="mailto:hoffmo@cablemo.net">hoffmo@cablemo.net</a>
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Andy Walker	<a href="mailto:awalker02@sbcglobal.net">awalker02@sbcglobal.net</a>
Harold Walker, Jr.	<a href="mailto:fiveinall@sbcglobal.net">fiveinall@sbcglobal.net</a>
Jim & Rosie Yaekel	<a href="mailto:jryaekel@htc.net">jryaekel@htc.net</a>

# Member Classifieds

Ed Millinger is looking for a wrought iron double 75 gallon tank stand.

I have bloodworms and brine shrimp. Brine Shrimp eggs 16 oz. can. I am looking for a 200 gallon tank. Jim Miller, 314-638-1134.

Charles Harrison (314) 894-9761, [charles@inkmkr.com](mailto:charles@inkmkr.com) –

Thiosulfate crystals (Chlorine Remover).....	\$3.00 a half pound
OTO double strength Chlorine/Chloroamine test kits - 4 ounce ...	\$12.50
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Methylene Blue 5% solution (4 ounces) .....	\$12.75
Acriflavine Concentrate (4%) solution, 2 ounces .....	\$12.70
Bromthymol Blue pH test solution, 4 ounces .....	\$7.00

Wanted: Small Styro shipping boxes - 12 x 12 x 12 or a little bit smaller. If your company uses them and throws them away, save them! Bring to the meeting or I'll come pick them up. Mike 636-240-2443

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 it, in which case it will run as requested.

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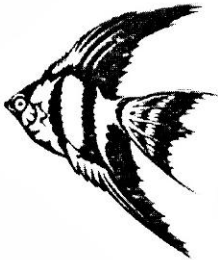


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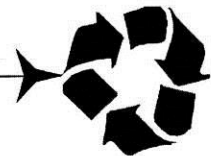
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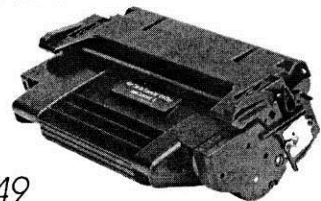
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