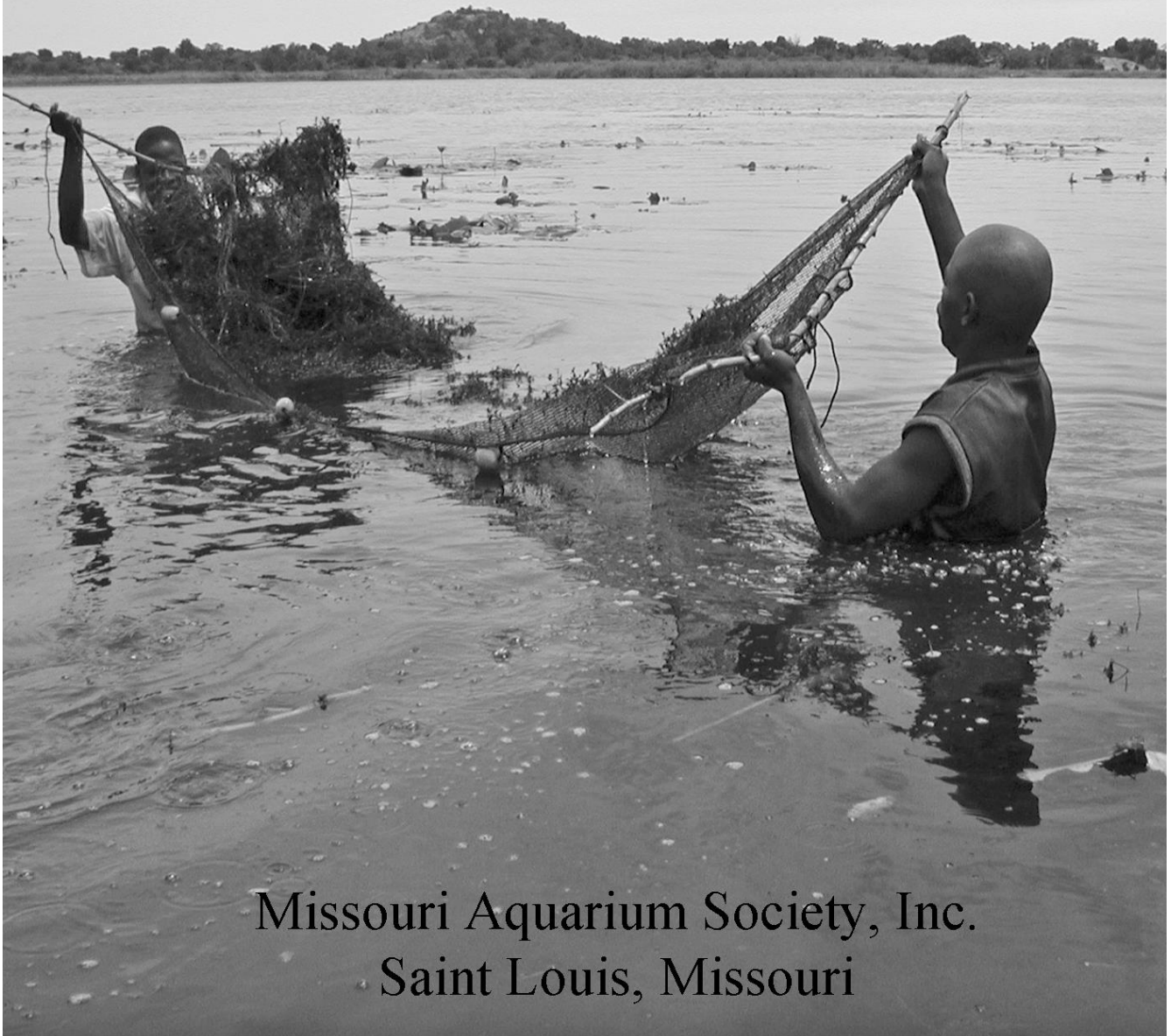


The Darter

September - October 2008

Seeking and finding Lake Victoria Cichlids
Part II



Missouri Aquarium Society, Inc.
Saint Louis, Missouri

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MASI's official web page: www.missouriaquariumsociety.com

Join the MASIFishHeads Yahoo Group. See web page for instructions.

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Places to Be / Things to See

SATURDAY September 20, 2008

Executive Council, 7:30 PM Details TBD

SUNDAY October 5, 2008

Swap Meet @ the Stratford Inn

THURSDAY October 16, 2008

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

SATURDAY October 25, 2008

Executive Council, 7:30 PM Hosted by Andy Walker

SUNDAY November 16, 2008

Auction @ the Stratford Inn

THURSDAY November 20, 2008

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

SATURDAY December 6, 2008

Executive Council, 7:30 PM Hosted by Charles and Sue Harrison

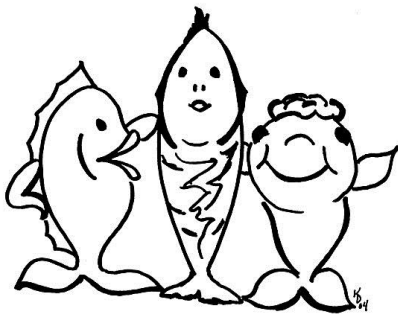
THURSDAY December 18, 2008

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

THURSDAY January 15, 2008

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

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, kathy@skdeu.com, or 9 Old Jamestown Ct. Florissant MO 63034

Presidential Preamble

By Mike Hellweg

Changes. The old adage says that “The only thing you can count on for sure is that things will change”. Here we are less than a quarter of the way through the 2009 fiscal year, and we’ve got changes in our Society’s leadership. Over the next month or two, you’ll note that a new face will be signing your auction checks, taking your money for your HAP/BAP auctions, and more! And another new face will be taking your BAP submissions. The wonderful thing about our Society’s members is that as soon as there is a vacancy, we have volunteers willing to step up and pick up where the previous volunteers had left off! Not many organizations can say that. We should all be proud of all of our volunteers.

Our Treasurer and BAP person for the past several years, Steve Edie, has had to step back. Many of you don’t realize exactly what’s involved in what all Steve does. In addition to having a real job, he’s a well-regarded speaker around the country, so he’s often traveling to other clubs speaking about his beloved Tanganyikan cichlids. He’s also on the Board of Trustees of the American Cichlid Association, which demands several hours of his time each week. In addition, here at MASI he’s the last person to walk out of every auction, then while the rest of you are acclimating fish, eating dinner and putting your feet up, he has to go through all of the checks, money, paperwork, etc. and make sure it all balances out. Then he has to write checks to everyone, collect on any bad checks (thankfully these are few and far between), and that’s just for the auctions! He also has to be at every event to take money for the club, pay bills, etc.

Several years ago, he took all of our paper BAP records, more than 25 year’s worth, typed all of the information into a database, and then went through and verified each individual scientific name, updating them as needed. What a huge undertaking! This doesn’t include all of the various reports, etc. that he had to do each month, and the other things like running the CARES program for our club, creating and running the recent very successful Net Buster donation project, and many other things.

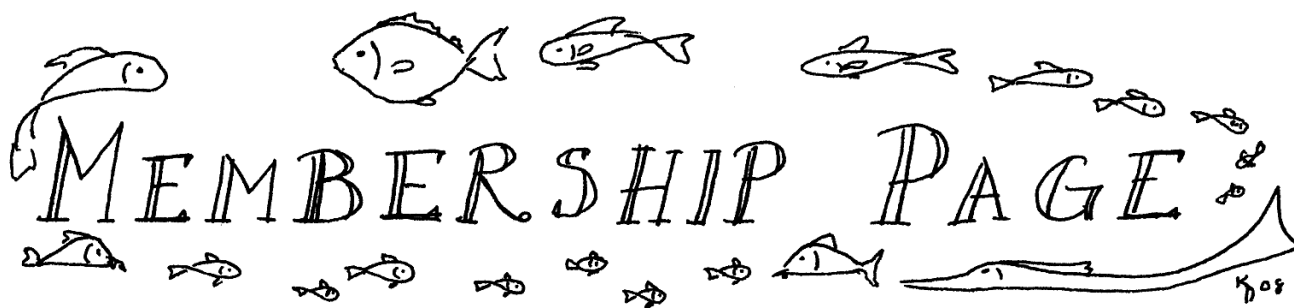
THANK YOU STEVE!

I want to publicly thank Steve for all he has done behind the scenes to help make our club run so smoothly for all the rest of us. His efforts will be missed.

Andy Walker will be taking over as Treasurer. Please be gentle on Andy for the first few months as he learns his new job. And our old BAP chairman Pat Tosie will be stepping back into his role as BAP Chairman. Please give him your support as well. **Thank you Andy and Pat for stepping up to help out.**

Earlier I mentioned the Net Buster project. Just to update you all on that, our Society’s members collected and donated more money than any other organization in the USA! Your money is already at work. Those net busters that we collected money for just a few months ago are already at work in Lake Malawi! Talk about a quick return on our money!

...and for now, ‘nuff said...



MEMBERSHIP PAGE

THANK YOU, MEMBERS. The Missouri Aquarium Society is ending the summer with 108 members, including the Missouri Department of Conservation and the pet stores who advertise with us. Your membership pays for the printing of the club publication-The Darter.

IF YOU ARE A MEMBER, you are NOT automatically on the Masifishheads Internet group. If you would like to join the Internet group, and receive emails, please go to www.yahogroups.com to sign up.

IF YOU ARE ON MASIFISHHEADS, our Internet group, you are NOT a member of the Aquarium Society. Membership entails signing up at an event and paying the yearly dues. Again, thank you to everyone who does renew their membership every year-you help make the club what it is.

TWELVE QUESTIONS FOR JIM AND SUE AMSDEN:

FROM JIM:

1. What year did you get your first fish tank and what fish did you put in it? (optional) did you name the fish? - *Mom had fish when we were kids. My first fish tank was with my brother Bill when I was around 14, I think. We started with cichlids. That was what our friend Harry was into and we liked his tank.*
2. If you could hire a helper to clean and care for it, would you have a massive indoor tank or a big pond? - *I wouldn't need a helper other than Suzie, but a really large pond would be great. No big waterfall or fountains, just lots of water and room for fish and plants.*
3. The dream fish I want to keep is... *Too many great fish to think of just one. But when we had the pet shop we would sometimes get in fresh water stingrays and teach them to hand feed. If we had time and space that would be fun again.*
4. The fish I want to get fry from is... *Any! Our tanks are all community tanks. So if they give us fry and some make it, great.*
5. If you could have only one tank of 75 gallons, what would you keep in it? - *I'd build it around angelfish. There are so many wonderful fish you can mix with angels.*
6. Name your proudest accomplishment in the hobby to date. - *Being asked to judge so many fish shows over the last 20 some years. It's always a wonder. And when Suzie gets asked to judge too, even better!*
7. Outside the hobby, what accomplishment are you proudest of? - *Being happily married for almost*

18 years, "wow". And have the pet shop for 20 years. And being able to make music.

8. Name an interest of yours that has nothing to do with fish. - *Playing music with Suzie and our friends in the band. We suck, but we have alot of fun.*
9. Do you have a fish-related tip to tell the members? - *Remember that it's a hobby. If you think you are going to breed fish and make money, you won't.*
10. My favorite cichlid is... *Nearly all of them, but I has a soft spot for Pike Cichlids.*
11. My favorite livebearer is... *The Four eyed Livebearer, the Anablep.*
12. My favorite catfish/cory or pleco is... *For small catfish there is nothing better than any of the cory cats. For medium to large cats I like the pimo cats, and spotted Pictus for community tanks with fish large enough so they can't eat them. And for cichlids I like the 4 line pimodellas. For plecos I like the plain old brown hypostomus plecostomus. That was the common pleco when I was kid and I still like them. They work great in almost any tank setup.*

FROM SUE:

1. What year did you get your first fish tank and what fish did you put in it? (optional) did you name the fish? - *I was about 6 years old when I had my first fish tank and actually it was a fish bowl and it sat on the shelf above my bed. I had an albino cory cat and his name was George.*
2. If you could hire a helper to clean and care for it, would you have a massive indoor tank or a big pond? - *A big pond is what I would like to have; being outside by a pond is awesome.*
3. The dream fish I want to keep is... *Zebra Plecos – I've tried them before but they are so hard to keep.*
4. The fish I want to get fry from is... *I'm just happy when any of them have babies....*
5. If you could have only one tank of 75 gallons, what would you keep in it? - *A community tank with angelfish, silver dollars, swordtails, botias, catfish, blue lobsters, small cichlids, a nice wide variety of fish is more fun to me.*
6. Name your proudest accomplishment in the hobby to date. - *Winning at the Fish show with my best betta.*
7. Outside the hobby, what accomplishment are you proudest of? - *Having helped Jimmie with the Pet Shop, it was a great place to work and to hang out at.*
8. Name an interest of yours that has nothing to do with fish. – *Music, Jimmie and I are in a basement band, we have a lot of fun playing music and hanging out with our band mates.*
9. Do you have a fish-related tip to tell the members? - *Do water changes often.*
10. My favorite cichlid is... *Julidochromis*

11. My favorite livebearer is... *Swordtails*

12. My favorite catfish/cory or pleco is... *Long fin albino Cory Cats – Named George.*

MASI members, do you have something to brag about? Each issue of “The Darter” will feature a Membership Page. In it, we will have member interviews, information about other things MASI members are doing (this is a good place to tell us about upcoming school plays the kids are in, job promotions, A+ report cards, wedding anniversaries, and the like). We also want to hear what your fish are doing!

Just email (kathy@skdeu.com) or call Kathy Deutsch (314-741-0474) with the info and she will write it up and pass it to the Editor.



MASI's Annual Swap Meet!

Sunday October 5, 2008

Noon to 3:00 pm

Stratford Inn in Fenton, MO

Admission \$1 per person, children under 10 free!

Got extra fish? Too much Java Moss? Java Fern growing out of the tank?

Sell 'em! Got an extra tank in the attic or basement? Sell it!

Clean out the extra stuff in your fishroom or closet!

You can sell anything “fishy” or hobby related!

Fish, plants, tanks, equipment, books, magazines, foods, decorations,
collectibles and more!

**Tables are just \$25 each. Space is limited, so sign up early! We'll also gladly accept
100% donations to be sold at the MASI table.**

**For information and registration, contact chairman Bob Buckles at [robert_buckles AT
hotmail DOT com](mailto:robert_buckles@hotmail.com)**

MASI reserves the right to refuse to allow the sale of any illegal or dangerous items, hybrids, Missouri or Illinois native fish or plants, or anything that is not related to the aquarium hobby. Transactions are strictly between the buyer and seller.

See the rules for further details.

Club Hopping

Steve Edie

Oct 5 - St Louis: Missouri Aquarium Society – Swap Meet

Oct 11-12, 2008 – Plainwell, MI: Fall Workshop (11th) and auction (12th)

Oct 16-19, 2008 – Laurel, MD: All-Aquarium Catfish Convention – Convention

Nov 13-16 – Atlanta: Aquatic Gardeners Association – Annual Convention

Nov 16 - St Louis: Missouri Aquarium Society – Auction

Nov 21-23 – Cleveland: Ohio Cichlid Association – Cichlid Extravaganza

Jul xx, 2009 – Cincinnati, OH: American Cichlid Association – Annual Convention

Member Classifieds

Charles Harrison (314) 894-9761, csharrison@inkmaker.net -

Thiosulfate crystals (Chlorine Remover) \$3.00 a half pound
OTO double strength Chlorine/Chloroamine test kits - 4 ounce - \$12.50
Flubendazole, 5% powder 10 grams \$5.00, 25 grams - \$20.00
Lavamisole HCl Powder - 5 grams treats 100 gallons \$10.00
Methylene Blue 5% solution (2 ounces) \$12.75
Acriflavine Concentrate (4%) solution, 2 ounces \$12.70

Wanted Adults albino bristlenose plecos==call Bob [314]428-5133

Justin Lehmann 636-926-0615 after 5, just3820@aol.com

Orange Koi Angelfish - 50 cent piece body size - \$7 ea
Orange Koi Angelfish - Young adult - \$15 ea
Super Veil German Blue Blusher - Dime size - \$5 ea
Super Veil German Blue Blusher - N - Q size - \$7 ea
Adult Blue Rams - 1.5" - \$8 ea
Adult Blue Rams - full grown - \$15 ea
Proven Pair Blue Rams - \$30 ea
Juvenile Blue Rams - 0.75" - \$5 ea
Assorted Adult Discus - \$20 - \$60 ea
WTB - Adult Veil or Super Veil German Blue Blusher female and or pairs

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.

HAP Report July-August 2008

Mike Hellweg

Hello all,

It's been a great couple of months for the HAP again! The summer's the time, and the ponds have been busy.

Derek Walker's submitted several first time submissions and a seed reproduction!

Micky Lee submitted a truly gigantic Thalia - a Missouri Native that's endangered in the wild. Fortunately, it's fairly common in the trade, and common in many southern States. We're just on the northern edge of its range.

Welcome back to Marc and Kathy Daly. It's been several years since they've participated in the program. It's good to have you back!

Tony McMillan is coming on strong, too, with several submissions each in the past several months.

And newer members Laura and Dave Wagner and Dwayne Peters are starting to accumulate points, too.

And finally Andy Walker is showing everyone that you don't have to have a hundred tanks to participate in both the BAP and the HAP!

Well done all!

Keep 'em green!

Member	Species	Common	Rep	Pts	Total
Tony McMillan	Echinodoras osiris		V	15	60
Tony McMillan	Echinodoras paniculatus	Graceful Sword	V	15	75
Tony McMillan	Lemna mino r	Dwarf Duckweed	V	5	80
Tony McMillan	Microsorium pteropus	Java Fern	V	10	90
Laura & Dave Wagner	Taxiphyllum barbieri	Java Moss	V	5	15
Andy Walker	Anubias barteri nana	Dwarf Anubias	IB	20	345
Andy Walker	Anubias hastifolia		V	15	360
Andy Walker	Anubias sp. Mutengene	Mutengene African Sword	IB	20	380
Andy Walker	Bacopa caroliniana	Common Bacopa	IB	15	395
Andy Walker	Bolbitis heudelotii	African Water Fern	V	10	405
Andy Walker	Didiplis diandra	Caterpillar Plant	V	15	420
Dwayne Peters	Apium inundatum	Water Celery	V	10	25
Dwayne Peters	Egeria densa	Anacharis	V	5	30
Dwayne Peters	Riccia fluitans	Crystalwort	V	10	40
Marc & Kathy Daly	Cyperus alternifolius	Umbrella Palm	OB	10	240
Marc & Kathy Daly	Eichhornia crassipes	Water Hyacinth	OB	5	245
Marc & Kathy Daly	Nymphaea sp. Tina*	Tina's Purple Fragrant Water Lily	OB	10	255

Micky Lee	Colocasia esculenta Yellow splash	Yellow Splash Taro	V	15	595
Micky Lee	Thalia dealbata	Thalia	V	10	605
Derek Walker	Anubias barteri Moliwe		V	15	2210
Derek Walker	Echinodoras cordifolius Marble Queen				
		Marble Queen Sword	V	15	2225
Derek Walker	Echinodoras cordifolius Marble Queen				
		Marble Queen Sword	OB	15	2240
Derek Walker	Eichhornia crassipes	Water Hyacinth	OB	5	2245
Derek Walker	Equisetum hyemale	Horsetail Rush	V	10	2255
Derek Walker	Hippuris vulgaris*	Mare's Tail	V	10	2265
Derek Walker	Houttuynia cordata Chameleon*		OB	10	2275
Derek Walker	Nymphaea sp. Murillo*		OB	10	2285
Derek Walker	Oenanthe javanicum Flamingo*	Flamingo Water Parsley	V	10	2295
Derek Walker	Pistia stratiotes	Water Lettuce	OB	5	2300
Derek Walker	Pontederia cordata Pink Pons*	Pink Pickerelweed	V	10	2310
Derek Walker	Pontederia cordata Pink Pons	Pink Pickerelweed	OB	10	2320
Derek Walker	Pontederia cordata	Pickerel Weed	V	10	2330
Derek Walker	Pontederia cordata	Pickerel Weed	OB	10	2340
Derek Walker	Sagittaria graminea Crushed Ice		V	5	2345
Derek Walker	Sagittaria graminea Crushed Ice		OB	5	2350
Derek Walker	Sagittaria graminea Crushed Ice		S	5	2355
Derek Walker	Sagittaria graminea	Narrow Leaf Arrowhead	V	5	2360
Derek Walker	Sagittaria graminea	Narrow Leaf Arrowhead	OB	5	2365
Derek Walker	Saururus cernuus	Lizard's Tail	V	5	2370
Derek Walker	Typha latifolia	Common Cattail	V	5	2375

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

* = MASI First

Editor's Notes

Steve Deutsch

I have found a few more reprints of our member's articles that I have not recognized yet. The July-August 2007 SWAM of the Southwestern Michigan Aquarium Society contains "The Tiger Teddy – *Neoheterandria elegans*" by Mike Hellweg. The January 2008 Fish Tales of the Tri-County Tropical Fish Society contains "Algae in a Planted Tank" by Derek Walker. The January 2008 TropiQuarium of the Motor City Aquarium Society contains "What to Do for a Prolonged Power Outage" by Charles H. Harrison, Ph.D. This is the second reprinting of this informative article, and was reprinted from our web site. Congratulations to all three authors. I think I am caught up with the reprint credit.

This issue has the second part of the article with pictures from Lawrence Kent. Again this issue, he also provided the picture on the cover. This month's Tech Tip is from Andy Walker. Andy is still looking for other members to share their tips so we can keep this going every month. We have articles from Harold, Derek, and Andy Walker. Time for the other last names to step up! We also have three exchange articles this issue.

Deadlines for articles for the final issue this year is October 15. Remember, all articles of one or more pages are automatically entered for the publication award.

Seeking and Finding Lake Victoria Cichlids, Part II: Where is Lake Nawampasa and Is that Cichlid really “Extinct in the Wild”?

By Lawrence Kent

In part one of this article, I told you about my first trip to Lake Victoria in Uganda and then my second trip to the satellite lake called Gigati, about fifteen miles from the small town of Pallisa in northeast Uganda. Because Nile Perch weren't introduced into most of the satellite lakes, their cichlids are said to have escaped the ravages of that big predator and maintained a greater degree of diversity. We got lucky and found a lot of diverse and beautiful cichlids in Gigati, but I had read that there were even more species in a lake called Nawampasa. The trouble was that we couldn't find anyone in Pallisa who had even heard of Nawampasa. Later that night a local shopkeeper named George Ouze told us he'd made some inquiries and, although he wasn't sure, he thought he now could find Nawampasa. So we set off early the next morning with George Ouze, in the dark and pouring rain in our old Toyota Land Cruiser.

After a half hour, we came to a town called Namutuba and tried to buy a jerry can so we'd be prepared to collect lake water for future water changes. None of the little shops had any to sell, but we found a helpful man who said he would go home and get one he could sell us. He was desperately poor, barefoot, and wearing a stained and shredded old shirt. I bought his jerry can, and we headed east on another dirt road that had become muddy and slippery in the rain. We passed dozens of tiny groupings of mud houses with thatched roofs, cassava fields, and barking dogs. At each intersection, we'd stop and ask “Which way to Lake Nawampasa?” but our question would generate only confused responses in local languages and finger pointing. No one seemed to really know. We kept going. Past Kaliro, Nawaikike, and Irundu. At one point the road was blocked by a small van that had slid sideways and become stuck in the mud, half on the road and half off. As we tried to squeeze by, our car also slid off the road into a ditch, its wheels spinning in the mud. I thought it might roll, but our driver, Sanyo, was able to drive up onto an embankment while maintaining momentum, and then crash through some bushes to stabilize the car.

We got to a place called “Nawampiti” and asked the locals about Nawampasa. We'd been driving for almost four hours, so when they said they didn't know, but told us of another lake nearby, we decided we'd try it. One of the locals offered to guide us there, but was afraid to get into our car, because it was painted military green. There's an ugly history of forced conscription by both rebels and official armies in Uganda, and this wariness was one of its legacies. So we followed him on his bicycle, a couple of miles down to the shore of a shallow, reed-lined lake. The area in which it was located was called Wampala but there was some ambiguity about the actual name of the lake. It was probably a branch or “finger” of Kyoga. The Nile River actually flows through Lake Kyoga on its way from Lake Victoria to Lake Albert in Western Uganda, and then continues through Sudan and eventually to Egypt.

The rain stopped just as we parked the car, right on cue. We got out and were soon surrounded by fifteen young men and boys. We showed them my minnow seine and the pictures of cichlids in the Barrons book on “Lake Victoria Basin Cichlids.” Five minutes later, some of them dragged the seine through the mucky shallows and dropped the contents into the flooded bottom of an old canoe for us to pick through. There were lots of young tilapia and unidentifiable, tiny haplochromines – nothing very interesting – so we gave up on that and headed further out into the lake in one of the canoes, armed with a local cast net. It was a beautiful lake, with lots of pied kingfishers hovering above and water lilies and

hyacinth floating here and there. Unfortunately, the local man throwing the cast net caught only a couple of tilapia. The mesh was too big to catch the haplochromines I was after. We headed back, closer to the shore, and a few of the locals agreed to try the seine again, but this time in deeper water – about 5 feet deep. The area had a lot of underwater vegetation and small fish that I could see from the canoe. They caught a lot of little silvery and bluish haplochromine juveniles, but nothing too interesting. Somebody noticed a Nile crocodile in the water about 50 feet away. We decided it was time to give up on that locale and continue our quest to find the real Lake Nawampasa.

I paid the requisite tips and we drove on. After a couple more hours of driving, following seemingly random directions from locals who hadn't heard of our lake but were willing to point in different directions, we were getting frustrated. It was 3 p.m. and the only thing the three of us (the local driver, George Ouze, and I) had eaten all day were the five granola bars that I had packed, which we had to share, and the drinking water, which was running very low. Our driver, Sanyo, seemed particularly keen to throw in the towel. So we gave up on our quest for the holy grail of Nawampasa and instead settled for another local landing spot that someone told us had some of the fish pictured in my book.

This papyrus-filled lake was near a traditional village called Buyuba, so there were plenty of boys willing to help us. It was probably another branch of Lake Kyoga but nobody seemed sure, and the language barriers were formidable. Some of the boys dragged the seine and caught scores of bright yellow Dwarf Victorian Mouthbrooders, *Pseudocrenilabrus multicolor victoriae*. Others headed out into the lake with hook and line and came back with about twenty beautiful haplochromine adults. Looking these over, I faced the same problems with identification that I had confronted at Lake Gigati the day before; nonetheless, I think some were *Haplochromis* sp. “ruby” with dark sides and orange backs, separated by a blurred yellow stripe, with red fins and blue lips. They were gorgeous! The dark blackish-blue ones -- glistening in the sunlight -- with bright red caudal and anal fins were probably *Astatotilapia nubila*. There were also some fish with bright red on their backs, cheeks, faces, and caudal, dorsal and anal fins, with some gray barring and hints of yellow and green on their flanks. Greg Steeves later told me these were probably *Gaurochromis* sp. “cobalt” or maybe *Xystichromis* “Kyoga Flameback,” although he wasn't sure. By looking at the photos I emailed him, Greg helped correct many of my initial mistaken identifications. He's the Regional Coordinator for the American Cichlid Association's Conservation Priority List for Lake Victoria. My friend from St. Louis – champion fish breeder Mike Hellweg – put me in touch with Greg, who's been extremely helpful. Mike also helped identify fish in my photos by looking at Ole Seehausen's book on Lake Victoria's cichlids. That book is out of print and I don't have a copy.

We also found and photographed another unusual haplochromine-shaped fish at that spot. It had orange-pink blotches on its gill covers and lower anterior flanks, a dusty reddish stripe along the lateral line, yellow-green on its lower posterior flanks, a violet patch right above its anal fin and into the caudal peduncle, a blotched violet back, and red unpaired fins. The blend of shiny but subtle colors on that fish gave it an overall “mother of pearl” appearance. Neither Greg Steeves nor I could identify it.

From there we started to head back towards Entebbe, where I'd booked a hotel room. But first I wanted to stop in Jinja, a small city located at the “source of the Nile” where the great river flows out of Lake Victoria. I wanted to visit the Ugandan Fisheries Research Institute there to try to get some more information. I'd read about this institute in an article by Lee Newman available on the web. He'd reported that the Institute housed several exhibit aquaria with local fish. We raced to get there before its staff went home for the night. But by the time we arrived, the guard with the key to the aquarium room had left so we couldn't get in. One of the staff told us “there's not much left in there to see anyway” and then provided some identification tips on the more common haplochromine species, suggesting that many were *Xystichromis*. He also told me we had gone totally the wrong way in our quest for Nawampasa: “My goodness, why did you go all the way to Pallisa? You should've just taken the Kamuli road from here. Next time, come see me first.” He also said he might be able to take me out to some

nice rocky islands in Lake Victoria to catch more species, if I would pay for the boat's fuel. Sounded like a good deal to me. I hope there is a next time.

From Jinja it took another four hours to reach Entebbe (traffic when passing through Kampala) so I didn't reach my hotel until about 10:30 that night, dehydrated, filthy, starving, but pretty happy. Luckily the cook made me some spaghetti.

Five days later, after many work meetings on agricultural issues, it was the weekend again, so late Saturday afternoon I took a motorcycle taxi down to the Bugonga waterfront to look for the fishermen who had helped me seven weeks earlier during my first trip. I asked them to round up some "nkedge" (haplochromines) and they said they would do so early the next morning. That Sunday I got up early, went to church, then headed back to Bugonga to find my fisher-friends. One boy had a couple of dozen fish swimming around in the water on the floor of his canoe, but nothing very interesting. Another canoe arrived on the beach filled with freshly caught Nile perch. There were about twenty of them and a group of women gathered around to buy these delicious fish. The women were (food) fish traders. Then I bumped into Bernard, the old Ugandan fisherman who had taken me out in his canoe the first time I visited. He recognized me and told me to get in again. We paddled out a few hundred yards and he pulled up a jerry can full of fish he'd been storing underwater. When we got back to shore he spilled its contents onto the floor of his boat, and we started looking at the species.

Most seemed to be Rock Kribensis, although I'm not really sure. They were about 4 inches in length, grayish-blue, with bright red caudal and anal fins. Some were yellow with six dark bars crossed by two lateral stripes, generating a checkered appearance. They also had some reddish orange in all of their fins. Maybe a yellow race of Rock Kribensis? Maybe an *Orthochromis* species?

I found two more species of note, both of which I was able to get home to Seattle. The first was a gray-bodied fish with black bars, blue lips, a red-edged tail, and a bright, metallic blue dorsal fin. It looked just like *Pundamilia pundamilia*, although none have been reported previously from this part of the Lake. The second was a long snouted cichlid with a yellow-green base color, dark bars, a dark greenish stripe along the lateral line, red-edged fins with blue rays, and rosy patches straddling its gill covers. Greg identified it from a photo as *Lipochromis parvidens*.

While we were sorting through the fish on the beach, a local came up to show us a big synodontis catfish he'd caught, about nine inches long, probably *Synodontis victoriae*. Another guy came by to show us a big elephant fish, probably 20 inches long, probably *Mormyrus kannume*. Then Bernard said "this one is different" and pulled a three-inch haplochromine from his boat. He showed me the unspectacular grayish fish with the torpedo-shaped body of a harpagochromis. It had two black stripes and some subdued barring. I snapped its photo, and thanked him.

When I got back to my hotel room, I looked at that photo more carefully and compared it to the photos in the Barrons book. It matched the photo of *Harpagochromis* sp. "Two Stripe White Lip." But the text explained that this species is "extinct in the wild."

"Wow" I thought, "either my identification is off, or this species really isn't extinct, which is great news." Maybe the Nile perch haven't gobbled them all up yet.

Once home, I shared the photo with Greg Steeves, and he said: "Maybe. It's definitely a *Harpagochromis* species but I can't tell if it's a Two Stripe. We need to share the photo with more experts and collect their opinions."

Greg's doing so through the internet. If this newsletter publishes the photo, take a look, and share your opinion with me (lawkentnorton@yahoo.com). In the meantime, I'm hoping for the best.

God bless you, and your fish.



The author and fisherman at Wampala on shore of Lake Kyoga.



Possible *Harpagochromis* sp.
Two Stripe White Lip collected near Entebbe



Mormyrus kannume



Haplochromis sp. Ruby



Synodontis victoriae



An *Astatotilapia nubila* from Lake Kyoga

Left blank for alignment purposes.

The Rejuvenating Herb

By Derek Walker

Many plant herbs can do good things for human body and one of them can be found in the aquarium. The Bacopa Monnieri can found in every local fish store. This is one of the easiest plants to propagate as a stem plant, but one of the trickiest plants to seed.

Bacopa species were originally found in the pan tropic area of the world. As years passed, we discovered that we can grow this plant in our own backyards. The Bacopa Monnieri is best when it grows outside the aquarium. I experienced that the growth rate in the aquarium tends to be a lot slower than being outside. When growing the Monnieri species you will see that it does not grow hair on the stem like some of the other Bacopa species. In the aquarium this plant grows quickly with the addition of Co2.

You don't have to be an expert to get this plant to flower. I had this plant flower indoors with a regular shop light.. I planted my plant in a normal flower pot with regular potting soil. This plant had over fifty or so flowers on it. As the flowers died off, new ones opened up. The flower is a neat, little, white flower that only gets about half inch wide when fully open. Other species may have other colors. If you look a Gary Langes photo on the website you will see a purple flower from Bacopa Caroliniana. Both of the flowers sizes and shapes are exactly the same. As flowers produce in the aquarium you need to start pollinating them with a soft tip paintbrush. Once the flower dies off you will notice a big fruit from the flower. I don't know the exact name for this fruit but it is more like a pod. This pod contains all the tiny seeds from Bacopa Monnieri and by looking at the photo on the web it has a pod too. These types of pods may be the way that the Bacopa seeds form.

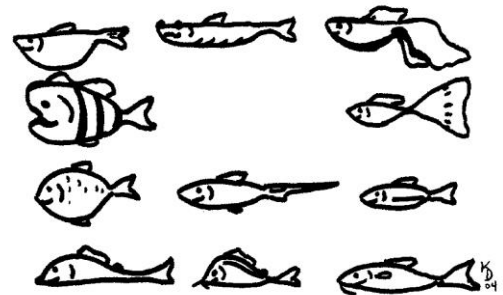
Now that you have the pod it's time to get the seeds. This is the trickiest part. You need to cut the flower stem from the plant and leave the pod attached to the stem. You will need a clean bowl and clean water. I used bottled water to fill my bowl up. Next, put all of your stems in the bowl and leave it under light. You want all the pods to rott open. This is where all the seeds are. You will see all these tiny little white seeds all over the bottom of the bowl. Just leave them alone and you will see the seeds starting to sprout. Make sure you keep the bowl under light and make sure you put a piece of glass or plastic wrap over the bowl to keep it from drying out. You don't really see a seed once it starts to sprout; all you see is a root with a single green leaf. After a couple of days you will see the single green leaf split into two. Now you have a baby Bacopa stem that resembles the mother plant.



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Aquarium Tech Tips

Correcting for Missed Water Changes

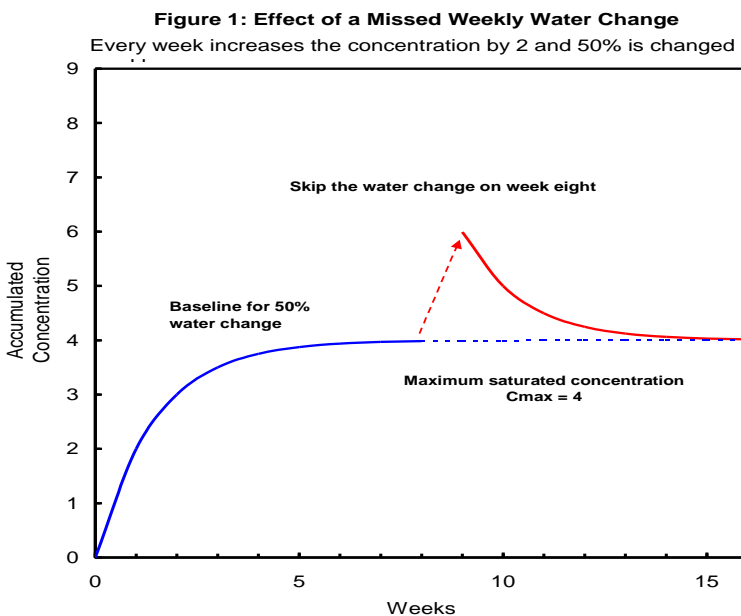
By Andy Walker

Aquarium Tech Tips in March-April 2008 edition of The Darter presented an article on how weekly water changes control the water chemistry in your aquarium. It expanded on comments made by Charles Harrison during our July 2007 meeting and showed that the amount and frequency of your water change can affect the amount of chemical compounds in your aquarium water. The scope of the article did not address what to do when a water change is missed, although all of us have had occasions where our routine was interrupted and a water change was missed¹. The good news is that if you adhere to your routine you will eventually reestablish the maximum saturated concentration (C_{MAX}) of the chemical compounds you are concerned about:

$$[1] C_{MAX} = 100(C_{INCREASE}/\%WC),$$

where $C_{INCREASE}$ is the increase in concentration of the chemical compound you are concerned about between your water changes and $\%WC$ is the percentage of water that is changed. The objective of this article is to show how long it takes to reestablish C_{MAX} if you continue doing nothing other than your normal routine and how to calculate a water change that will reestablish C_{MAX} immediately on your next water change.

To begin, let's review the recommended 50% weekly water change briefly. As before we will assume that some chemical compound will increase 2 parts per million² (ppm) over a week. The concentration selected is unimportant and was picked arbitrarily. Deliberate additions of plant fertilizer, waste from fish respiration, feces, uneaten fish food or dead plant matter can indeed change the chemistry of your aquarium water more or less, however. The chart shows the effect that a 50% water change has on that over time. This will be the baseline for our discussion. It is the result of accounting, first, for the increase in concentration every week, and second, for the reduction in concentration due to changing the water. Please see the March-April 2008 issue of The Darter for a more complete explanation.



¹ The recommended water change frequency is weekly but it can be any other time period such as biweekly, semimonthly or monthly, although not recommended.

² Parts per million is more accurately expressed as milligrams per liter, mg/L.

Let's assume that we miss the water change on week eight. The concentration will increase 4 ppm over two weeks rather than 2 ppm over one week. This produces a spike to 6 ppm. If you get back to your routine on week 9 the spike will gradually decrease and self-correct from 6 ppm to 4 ppm over the next six weeks as long as no other water changes are missed. This is wonderful news since it's not often that you can simply ignore a mishap and the matter takes care of itself. Nevertheless, in situations where time is critical this could be a concern. Although more than 90% of the perturbation is corrected in a little as four weeks, it does indeed take four weeks to correct it. There is another option.

It is possible to make the full correction in week nine. To do this enough water must be changed to reduce the concentration from 6 ppm to 2 ppm so that by the end of the following week the concentration will be reestablished at 4 ppm. In other words you have to change 66.7% (four of six parts or two-thirds) of your water. Rather than thinking through this situation every time the percentage of water that must be changed to recover from the spike (%WC_{RECOVER}) can be calculated:

$$[2] \%WC_{RECOVER} = 100(1 - [(C_{MAX} - C_{INCREASE}) / C_{SPIKE}]) \text{ where,}$$

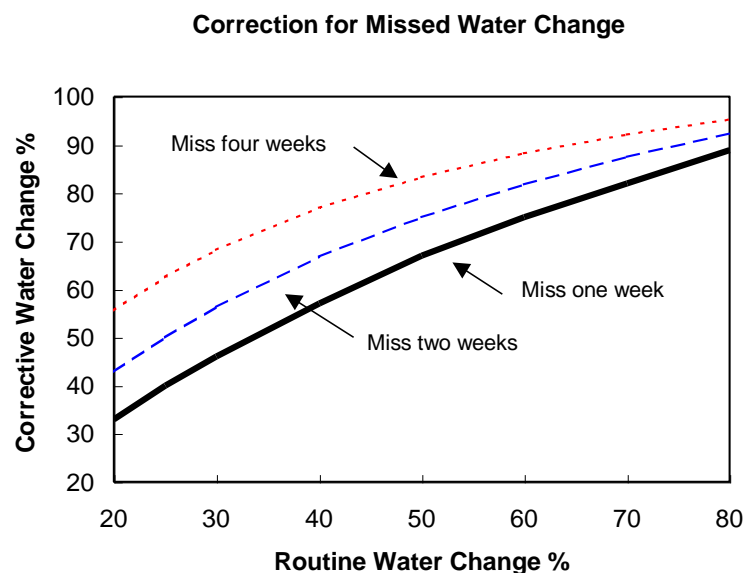
C_{SPIKE} is the concentration after the water change was missed. This quantity is simply the sum of C_{MAX} and C_{INCREASE} times the number of weeks missed. Although the equation appears complicated, all of the quantities are easily calculated. C_{MAX} can be calculated from Equation 1 and C_{INCREASE} is either an assumed quantity or a known one, such as a fertilizer addition that an aquatic gardener would make on a weekly basis. Further

simplification is achieved illustrating the effect of missing one, two and four weeks of water changes over a wide range of routine water change percentages as in Figure 2.

Although the illustration shows that it is possible to correct for any number of missed water changes, this conclusion must be tempered by the practicality of making large water changes. For instance, changing two-thirds (66.7%) or your water

presents far fewer challenges than changing three-quarters (75%) of your water. There is a practical limit that must be considered and that will depend on your particular situation. If it were not for the fact that the recovery from the spike is self-correcting over the weeks if you go back to your weekly routine, the situation would be more troublesome.

As a rule-of-thumb you can simply do an additional 15% water change if you miss one week or do an additional 25% if you miss two weeks. The closer you are to middle of the chart, the more accurate this rule-of-thumb will be if you want to correct for the spike on the following week. Keep in mind that if you keep up with your regular routine, most if not all of the spike will be eliminated the following week due to the corrective nature of adhering to routine. The choice of the corrective action yours to make



Types of Algae in the Aquarium

By Harold Walker

Hobbyists who keep aquatic plants in the aquarium probably have seen what is called “Algae Bloom” at some point or another. The most common algae seen in the aquarium are Red Algae, Green Algae, Diatoms and Blue-Green Algae. Excessive lighting from direct sunlight or aquarium lighting is one of the major problems for this. The other is from an excessive build up of nutrients or a combination of both. The best way to keep this from happening in your tank is by regular water changes and controlling the amount of light the tank receives. Here is a chart of the different types of algae in each group.

TYPE	CAUSE	CURE
<u>DIATOMS</u>	This is a brownish form of algae that is caused by poor lighting and a heavy load of nitrates and phosphate with a ph above neutral. It will form on plants, rocks and on glass.	Use of snails and algae eating fish will help get rid of Diatoms. Water changes and proper lighting will improve water condition and the algae will die off.

RED ALGAE

<u>BLACK SPOT</u>	This forms small black spots on the leaves of the plant. Excessive nutrients and lighting help it spread but the exact cause is uncertain.	Although difficult to control it is best to remove the affected leaves to help getting rid of it.
<u>BEARD ALGAE</u>	It has long black or dark green branches. This algae is usually introduced from newly added plants. It thrives on high nitrate levels and/or CO2 deficiency. It attaches itself on the leaves of the plant.	Use of algae eating fish and CO2 fertilization of the tank are the best ways to get rid of this algae.
<u>BLACK BRUSH</u>	Looks like dark bunches that attach itself to wood, rocks/gravel and the leaves of plants. It thrives in nutrient rich water that is acidic.	The best way to remove is by CO2 fertilization of the aquarium.

<u>BLUE GREEN ALGAE</u>	Forms a layer on the plants and gravel. It is caused by excessive lighting and high nutrient levels.	The best way of removing is by total darkness for about a week followed by a few large water changes.
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GREEN ALGAE		
<u>GREEN SPOT ALGAE</u>	These are small round dark green spots on the plant leaves as well as the glass. It thrives in poor water conditions.	Proper water conditions will stabilize it. The help of snails and algae eating fish will get rid of it.
<u>PELT ALGAE</u>	Long string that attaches to the plant leaves. Thrives in water with a high nitrate level.	Regular water changes will help slow the growth. Add snails and algae eating fish to get rid of it.
<u>GREEN BUNCH ALGAE</u>	It forms bunches that can grow over an inch long. It thrives in tanks that have too much light and that are over fertilized.	It can be removed by hand or by algae eating fish.
<u>GREEN THREAD ALGAE</u>	It forms long green thread (filaments) that grow from the plant. It thrives in excessive lighting.	It can be removed by hand or by algae eating fish.

Dwarf Suckermouth catfish (Otocinclus sp.)

These catfish have long been kept in planted and non-planted tanks for algae control. They are small suckermouth catfish that eat soft green algae off tank surfaces and plant leaves. Most varieties stay small.

Siamese Algae eaters (Crossocheilus siamensis)

SAEs are a prized addition to many planted tanks. SAEs are one of the only fish known to eat the dreaded Black Brush Algae. They resemble Flying Foxes, and will grow quite large (5 inches) in time. These fish are often mistaken for many similar looking fish. None of the look-alikes share the SAEs algae-eating skills.

Japonica Shrimp (Caridina japonica)

Algae Eating Shrimp are busy algae eaters. They are known to eat Black Brush algae, and hair algae, in addition to the normal soft green algae. They are an interesting and helpful addition to a planted tank. They can become tasty and expensive treats for larger fish, so be careful adding them to a tank with big eaters! They are mainly nocturnal, and hard to find, so don't assume they have become snacks if you can't find them.

Bushy Nosed Pleco (Ancistrus sp.)

The Bushy Nosed pleco is a variety of Pleco that stays small, and won't eat all your plants like their larger cousins. Bushy Nosed plecos are suckermouth catfish. They will primarily eat soft green algae off wood/rocks/plants/glass. They may damage or eat some softer plant leaves.

These are just a few examples of the types of algae commonly found in the aquarium. With the correct light exposure to the tank and good water quality your tank should never get an "Algae Bloom".

Enhancing The Appearance Of *Taxiphyllum Barbieri*

By Andy Walker

Taxiphyllum barbieri is commonly known as Java Moss (1). It's a unique plant that requires no special attention because it can grow in any water condition and under the worst lighting (2,3). For fish keepers, it provides an aid to spawning and a safe haven for small fry. Many fish keepers and breeders use Java moss for this purpose. I have an aquascaped community tank with 22 species of plants that are flourishing and the lone female *Corydoras panda* selects Java moss to hide her eggs almost without exception. Once removed, hatched and raised in smaller breeding tank, I have had great success raising the fry to juvenile fish when Java moss was in the aquarium. So, why would this plant need any extra attention or care?

Although the plant can be used for utilitarian purposes alone, it can also enhance the beauty of a planted aquarium with a little extra effort. The dark green color and fine branches provide contrast to lighter colored, large-leaf plants like *Anubias*, *Bacopa caroliniana* and *Hygrophila corymbosa angustifolia*. In an aquascaped aquarium, it can be attached to piece of driftwood, rock or an ornament to give your aquascaped setting a natural look. The moss is easily attached any object. Lay a few strands of the moss where you want it attached. Then, tie a piece of black cotton thread to object and wrap it around several times before tying it off. You can use fishing line or polyester thread too but I prefer cotton because it's natural. After a few months of growth the plant will attach itself and will have grown enough to cover the thread. At this point, some attention to maintenance is needed.

If left alone, Java Moss will form a dense, motley clump with branches that are frequently intertwined amongst themselves and string algae. I have driftwood in my aquascaped aquarium that's the centerpiece of my living room so regular pruning to prevent this essential. Pruning makes the plant more attractive because the longer untwined branches are free to flow and drift with the currents. Every week before I change my water and do my regular maintenance, I tug lightly at the branches that are clumped to separate the ones that are attached well from the ones that knotted in the clump and easily detach. Sometimes I manage to pull out six- to eight-inch long strands or larger clusters that have matted together. If I see ANY string or hair, all of it is removed – no exception. Algae can be a nuisance in an aquarium and it is always waiting to take advantage of unbalanced water chemistry (4) to propagate. If left alone the moss will act as a filter for debris (2,3). I believe that the decaying matter in the moss creates an imbalance in water chemistry that can make the moss an ideal site to grow. Regular siphoning during weekly maintenance or rinsing if it can be removed is recommended.

I encourage anyone with Java moss in a display aquarium to work with it weekly. It is truly a beautiful plant if given care. Even if you use it for spawning or a place for fry to hide, regular pruning also helps with spawning. Before I started thinning out the Java moss, the *Corydoras panda* would struggle to get into the clump and lay her eggs. By thinning out the clump and leaving the stems long and free flowing she finds her way deep into the moss and out of sight with much less effort. This also makes it much easier for me to search for the eggs after I notice spawning behavior or during my weekly maintenance. Give it a try.

- (1) The Truth Behind the Confusion – the Identity of Java Moss and Other Tropical Aquarium Mosses, B.C. Tan and Loh Kwek Leong, pp 4 – 9, The Aquatic Gardener, Vol 18, No 3 July – September 2005
- (2) Encyclopedia of Water Plants, Dr. Jiri Stodola, pg 329-330, T.F.H Publications, 1967.
- (3) Aquarium Plants, Christel Kasselmann, pg. 441, Krieger Publishing Company, 2003.
- (4) The Estimative Index – What Is It?, Tom Barr, pp26-39, The Aquatic Gardner, Vol 19, No 3, July – September 2006.

The Incredible Edible Plants

By Roger Halleen

Reprinted from the March 2008 Fish Tales of the Tri-County Tropical Fish Society

Well, I thought I would give it a second try here. In March of 2003 I started to write a series of articles on edible aquatic plants. I failed miserably, having written one and then never writing a second one. So this time I will try a little harder and see what happens.

he incredible edible aquatic plant! Actually many aquatic plants or some parts of the plant are edible. Some are edible just by themselves and others are great for mixing in a recipe. I don't know about you, but there have been many times that I have been sitting outside by my pond and started thinking what a shame to see the leaves or flowers of lovely plants die off and go to waste. I also have two other interests. As most of you know besides my fish hobby, I like cooking and eating. I can't think of a better way to get a little more enjoyment out of my main hobby than working some of the plants into the dinner menu. Just don't let the wife and kids see this article.

I maybe using a little different definition of aquatic plants than some of you are using so for this article let's use this definition; Aquatic plants, or hydrophytes, comprise those species of plants that are physiologically bound to the water to complete their life cycles. Aquatic plants can be submerged, floating-leafed, or emergent. The list of edible aquatic plants is astronomically long and. I imagine it would be boring to read though it. So I will pick several of the more common plants and tell you about them and how to use them in some recipe.

Now that we have the definition out of the way, we need to look at a few other aspects of edible plants before we get into the plants. That is - safety comes first. While many aquatic plants are edible, some are very poisonous, or poisonous if eaten uncooked. So make sure you know what you're eating and that you're fixing it the proper way. If you are out collecting, make sure you have permission to be where you are. Some people get very upset if someone comes picking their flowers or plants.

Ok, let's take a look at what we can grow and eat in our ponds. One of the easiest to grow and sometimes considered a weed is Sweet Flag (*Acorus calamus*); Family: Araceae (arum/palm) - Acoraceae (sweet flag). Other common names: Sweet Sedge, Sweet Grass, Sweet Root, Sweet Rush, Sweet Cane. Sweet flag leaves have a lemony scent. The roots have a sweet fragrance, and they were once used to flavor candy. Their habitat is swamps, marshes, riverbanks. , Height is 1-4 feet, Flower size is tiny flowers on a 2-4 inches. Spadix Flower color is yellow and green. Flowering time is May to August. Origin is Europe. Sweet Flag makes a great soup; therefore, it's a great way to start off a meal.

Sweet flag Soup

- 6 sweet flag florets
- 1/4 cup sweet flag roots, cubed
- 2 tablespoons butter
- 2 tablespoons honey
- 4 cups water
- 1/2 cups water
- salt and pepper

Scrape and wash the roots and dice small. Wash and clean the florets. Melt the butter and slowly simmer until the roots are cooked. Add the honey and the milk, simmer for another 10 minutes.

Now let's look at the *Nelumbo lutea*, American lotus. Family: Nelumbonaceae (lotus Family.) Other common names, yellow lotus, water-chinquapin. This is a perennial water plant that has large, spongy rootstocks (actually underground stems, called rhizomes) in the mud beneath water as much as 8 ft (2.4 m) deep. Petioles (leaf stems) arise from the rhizomes and each supports a single round leaf up to 2 feet (0.6m) or more in diameter.

Our main course for this meal is going to be,

Lotus Leaf Wrapped Fish with Fresh Mango Salsa

Salmon or other fresh fish, 6-8 oz per serving
1 lotus leaf for every two servings
Fresh mango salsa

Fresh Mango Salsa

1 mango, peeled and chopped
1/4 each red and green pepper, diced
1 green onion, diced
Brown mustard, all-purpose seasoning, fresh lime juice to taste

Preheat oven to 350F. Place fish in the center of the lotus leaf, spoon salsa over the top, wrap in the leaf, and secure with twine. Bake 30-40 minutes depending on the thickness of the fish. Slice and serve with additional salsa. The lotus leaf is quite tasty itself.

Well, for now I'll leave you with the above two dinner ideas. Next month I'll talk about plants that you can grow if you don't have a lot of room and recipes from them. See ya then.

Unshelling Shelledwellers

By Debbie Ayers

Reprinted from the Jan-Feb 2008 SWAM of the Southwestern Michigan Aquarium Society

I was getting ready to move, so I had to place my shell dwellers in temporary housing, as I had a friend who was willing to take care of them for me for a little while. As you may or may not know, when you get near the tank they all disappear; of course, they are hiding in the safety of the shells you provided for them. I had a large pod of shells for them instead of individual shells, and I wasn't willing to let my big pod go with them. Also it would have taken up too much of the tank as I had a 75 gallon tank. So how do you unshell a shell dweller???

First, I took a large Rubbermaid container and made a frame that I could rest the pod on toward the top of the container. Then I put some water from the tank into the container and then filled it the rest of the way with tap water, just enough to cover the pod. Then I placed the pod upside down on the frame. I waited to see if the shellies would come out, and after awhile I saw quite a few of them had come out and gone to the bottom of the container, as they are bottom fish and don't like being at the top of the water. I put the pod back into the original tank and caught the ones that had come out into the container. I placed the pod back into the container again to see if there were any more in the pod and, to my surprise, there were more still hiding out. After I caught what I thought were the last of them, I left the pod in the container and the next morning there were a couple more (stubborn little buggers). I gave them and some shells to my friend to keep for me, as I had to downsize tanks.

When I got them back, I just got them in their shells and put them into a 10 gallon tank. When the colony had grown, I decided to place them in a larger tank. I didn't want to use the shells they were in as they had a lot of algae on them. So now the challenge was how to get them out of the shells. So once again, I took the large Rubbermaid container and put a couple of clay pots into it and placed a cooking rack on them. You just need to make sure the rack you use has a big enough space for the shellies to get through. I filled it up just enough to cover the rack and placed the shells' opening down on the rack and waited till they went to the bottom and caught them. I place the shells in a bucket of water just in case there were any stubborn ones who didn't want to leave their safe haven. Of course, there were a few that I hadn't fooled, so I put the shells back on the rack and waited till morning; sure enough, they were all on the bottom hiding out around the clay pots. I put them into their new tank with the pod I had used before and they are very happy with their new homes.

Since I have done this a few times, I realize that they don't catch on, so you can fool them time and time again.

And The Winner Is...

By Bob Berdoulay

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When playing any game of chance you should be aware of the probability of a certain outcome. Most of us know that when flipping a two-sided coin our chances of calling it right are 50:50, 1/2, or 50%. What if we are tossing two coins? What is the probability of getting two heads? The answer is 25%, since we could have two heads, or two tails, or a head and a tail, or a tail and a head. Thus we have a 1 in 4 chance of getting it right.

These same rules of chance apply when trying to buy a pair of fish. Except for livebearers and dimorphic fish, it is often difficult to tell males from fe-males, especially in the young. Most store employees can't help in sexing fish. I have been dealing with Angel fish for a good number of years and I'll be d—ed if I can tell the sexes apart prior to them pairing off as adults. Most tetras, most danios, etc., are difficult to sex out. So buying a "pair" of fish is somewhat of a game of chance.

Most hobbyists will tell you to buy a batch of young ones and wait for them to mature and pair up on their own. That is usually what I do. Well what are the probabilities of getting a pair when buying more than two fish? The chart below predicts the chances of obtaining a pair when 2 or more fish are purchased. There is also an assumption that the tank from which you are drawing the fish contains equal numbers of males and females.

# of fish bought	Probability of at least 1 pair
2	50
3	75
4	88
5	94
6	97

The formula is: $(1 - (1/2)^n) \times 100 =$ (where n is the number of fish)

Of course you can be as lucky as I was in purchasing 8 young Apistos and getting all males. What are those odds? Around 0.39%. That's less than one half of one percent.

The Computer Page

Steve Deutsch

MASI's official web page: www.missouriaquariumsociety.com

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

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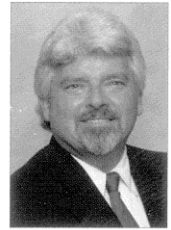
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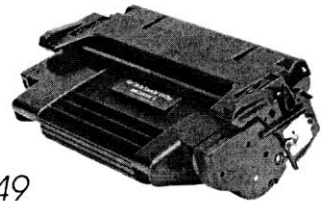
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