

The Darter

January - February 2005



MISSOURI AQUARIUM SOCIETY, INC.
St. Louis, Missouri

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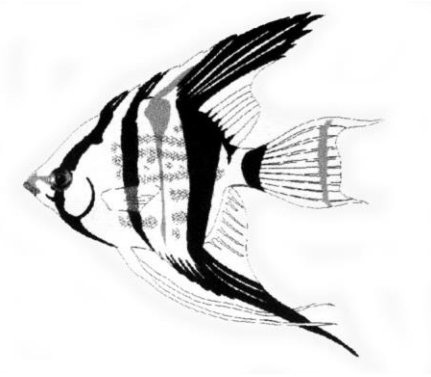
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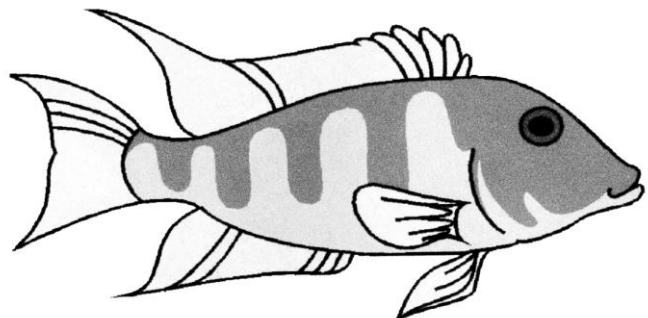
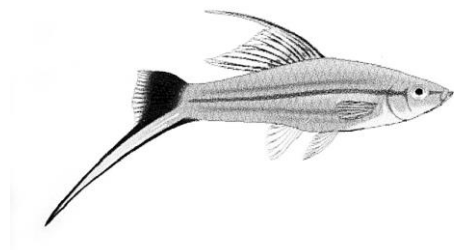
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Places to Be Things to See

Meeting Location - Please note that the general meetings are now held in the main church building - the one you pass on the left on the way back to where we used to meet.

THURSDAY, February 17, 2005

General Meeting, 7:30 PM @ Dorsett Village Baptist Church
Bring your Fishraising contest Fish!

SATURDAY, February 19, 2005

Executive Council, 7:30 PM hosted by Charles Harrison

SUNDAY, February 20, 2005

MASI Auction, All Species @ Stratford Inn in Fenton
Check-In at 10:00, Viewing at 11:00, Auction at noon

THURSDAY, March 17, 2005

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

SATURDAY, March 19, 2005

Executive Council, 7:30 PM hosted by Bob Buckles

THURSDAY, April 21, 2005

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

SATURDAY, April 23, 2005

Executive Council, 7:30 PM hosted by Diane Brown

FRIDAY April 29 through SUNDAY May 1, 2005

MASI ANNUAL SHOW at the Stratford Inn

THURSDAY, May 19, 2005

General Meeting, 7:30 PM @ Dorsett Village Baptist Church
Bring your Fishraising contest Fish!

SATURDAY, June 18, 2004 (SATURDAY June 25 in case of rain)

MASI Picnic @ Jim and Brenda Thale's

Presidential Preamble

By Mike Hellweg

Happy New Year!

It's officially 2005 now, and it's the time of year when most folks make resolutions of some sort. Most are broken by the end of January, but some are kept. Maybe you ought to think about making and keeping a fishy resolution or two. Doing **REGULAR** water changes, hmmm. We all need to do more – it's the best thing you can do for your fish! How about entering a fish or two in the Annual Show? It's not that difficult, and many of us can help you out with tips, lights, and even tanks or bowls! Just ask. Maybe write an article for the Darter.

The BAP and HAP have been pretty lively the past few years, mostly due to a few participants. Maybe you could try your hand at breeding a fish or propagating a plant – and then turn it in to the program! Maybe you've wanted a pond for years. This is the time of the year to start planning. For either project above, there is a lot of free advice out there from other members who have already made the mistakes so you don't have to. Again, just ask.

It's almost time to think about volunteering to help out the club for another year. Even just a little help will really make the "burdens" of others easier. We can always use help, both at the General Meetings and at the Show, as well as at every Auction. Many hands make light work (and more fun) for all.

Speaking of Auctions, just so you know, the February Auction date has been **CHANGED TO FEBRUARY 20, 2005** at the Stratford Inn. John can use some help for check in starting around 10:00 am. And Klaus can always use some extra hands at the checkout table. Don't forget, we can always use runners! Sometimes it's just good to get up and stretch your legs for a while. And you'll get a close up look at the fish being auctioned!

We have several new members this January. Welcome to all of you! I hope you find the club helpful in your hobby, as well as just plain fun. I've made a lot of great friends in the club (and other clubs) over the years. I hope you all will be new friends that we haven't yet had time to get to know! We're always open to new suggestions and new ideas, so feel free to jump in and offer yours. Of course, we're always open to new volunteers, too.

We also are open to all kinds of questions. There are several hundred cumulative years of experience in all aspects of fishkeeping among your fellow club members. All of us started out as beginners. All of us learned by asking questions. Most of us are still smart enough to know that we don't know everything, and we still ask questions! Never assume that your question is silly. I can't say it often enough - just ask!

Finally, we're still looking for an Advertising Chairman. Most of the Darter Ads are expiring with this issue, and I don't have time to contact them to renew them all. The job is pretty easy, but it is **VERY** important to the club's success. I don't feel it's a job that someone can just do when they get around to it, as I have had to do for the last half year along with being club president and everything else. I'd really like to have someone who just does the Advertising job for the club. If you've wanted to

get involved with the club, but don't have time for meetings, this may be the best way you can help! And it gives you an excuse to visit the local pet shops a few times a year!

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

Editor's Notes

Steve Deutsch

We have a winner for the 2004 publication prize - Ed Millinger took home Volume 4 of the Baensch Atlas. Ed is already in the running for 2005 with a couple of entries in this Darter, as is a new author, Lawrence Kent, and Klaus Bertich. The rules will be the same as last year. A prize, still to be selected, will be awarded by drawing at the Christmas meeting. Any article or artwork not required for HAP/BAP or as part of a club position (show, membership, auction, etc.) will enter you in the drawing. Items less than 1 page will get one ticket, items 1-2 pages will get 2 tickets, and items greater than 2 pages will get three tickets. Reprints of Darter articles in other publications will also receive tickets. So, the more you write, the greater the chances of you winning, but any author has a chance at the drawing. Only MASI members are eligible. There is plenty of time for you to send an article, artwork, puzzle, poem, or other printable original work.

Our Historian, Klaus Bertich, has discovered records indicating the club dates back to 1955, making 2005 our 50th anniversary, hence the cover art from Kathy Deutsch. Previously we had been dating the club from the time of incorporation rather than when it was founded. Anything related to the club's history would make appropriate article material this year.

We have one exchange articles this month. **The Advantages of Live Foods Over Frozen & Prepared Foods** by Oleg Kiselev, Don Wilson, & Steve Bartling is reprinted from the Jan/Feb '00 *Cichlid Tails* of the Texas Cichlid Association. Thanks as always to Steve Edie for finding these.

We had a few classified ads last issue. I don't know if the items sold or are still available, so I did not run them this issue. If you want a member classified to run, send me the ad, and let me know how many issues to run it, or run it until you cancel, or some instruction. Otherwise I will assume I should run once. Remember, the ad is free so it is a good way to list either for sale or wanted to buy.

Renew Now for 2005

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

Fish Raising Contest Reminder: Bring your fish to the February meeting!

A Look Back

Klaus Bertich

As most of you know by now I have had some time to work with the Historical Records. I was able to throw out lot of unnecessary items. So if you are looking for the seller's sheet from John Snabbleing it's gone, also if you a desire to know if they had donuts at the 1965 council meeting you'll have just do without that information, sorry. I was also able to put the Darters into binders in order by year. Some members donated their old books to the historian and to me directly to complete the inventory and it is as complete as it can get. I think I'm still missing one magazine but I think that that was one we may not have printed. Ralph Wilhelm gave me all of his books and it was not in those either.

The other thing I am doing with the books I have received is I have gone through the books and have removed the old articles, and have indexed them by subject, title, author and year. This is taking a long time to do but I hope to have it all done soon. What's the purpose? Well someone asked me a while back if I could locate an article they had written on a certain fish. I was told about when they wrote the article but was unable to locate it. With this list I'll be able to find any article we have in the files and I should be able to copy those for who ever needs them. I believe that there will be a charge on making copies but I need to bring this up at council. I also now have a lot of older books on hand that I will package up for sale at the auction or at the meeting.

One of the reasons that it is taking me so long is that I'm trying to include or make the subject the primary sorting factor. A lot of the article's written only use the common name of the fish they are writing about, and some of these author's know better that that. Some of these articles I start to read and I just can't stop, so some of my time lost, is my fault.

I have noticed that we have a lot of reprints from just a few writers. The articles are good but the editor has had no way of remembering who published what and when it was republished. So then this list will also be help to our editor who can make better use of our resources, and believe me there is a lot of information available. I will ask the council, and Web Mistress to see if we can put this information on the web, not the article's just the list of our club members article's. This way maybe some other club may ask to reprint some our clubs articles.

One thing that has come to mind is that we have a few heavy hitters in the BAP & HAP program and I was wondering where all of the articles have gone on the submissions. There are not that many in the archives. Another thing I've noticed is that we used to have a lot more people writing, and this is before the advent of the computer. I remember using a mimeograph machine to print up the older books. That meant writing the article and then typing it up on a master sheet. This was all done manually, it was labor intensive and it was usually up to one person to do most of it. Now we have an editor, and a printer and we all get together to collate, much better.

I've also noticed that all of the past editors have had the same problem, no articles. The club, as a whole has also had the same problem, in that there are only a few people involved with doing most of what needs doing. That seems to work though, but help is always welcome at any level. So one more time, the message I keep seeing is that, to get the most out of the club you should be involved in something, any thing. You do have the time, you just don't know it, look for it it's there. Serving on the

council, being an officer, advertisement chair, help at the auctions get involved and the club becomes yours not ours. I'm not involved in HAP or BAP but I've gotten more out of the club being involved in other ways.

Gary will coming around to ask for volunteers soon for next years officers and council members. Mike will always consider help on most anything a body wants to do.

It has been a lot of fun and now you all have finally heard from the Historian at least once in the last few years.

Klaus Bertich HHH (Horrible Hysterical Historian)

From Kirkwood to Lake Malawi

Lawrence Kent

In late August I received an email from a colleague asking me to go Malawi to run a training workshop for government regulators of genetically modified crops. It was late notice – I only had two weeks to make all of the business arrangements – but of course I felt happy to have this opportunity, because I knew I would find some way to tack on a couple of weekend days after the workshop to visit the Lake for the first time in my life. But I couldn't tack on more than two or three days without incurring the disapproval of my young family, because this was going to be my fifth trip to Africa this year and they were tired of me being away so much of the time. I had no time to make any arrangements for fish viewing – I had to focus on preparing the workshop. I flew from St. Louis to Boston to London to Nairobi -- where I had to spend one night -- then flew to Lilongwe (Malawi's capital) via Harare, Zimbabwe. The following morning I took a taxi about a hundred and fifty miles southeast to Liwonde, where we held the workshop for four days at the Hippo View Lodge on the Shire River.

During one of the workshop's tea breaks, I started talking about fish with one of the Malawian crop regulators, Dr. Fanuel Kapute, and he surprised me by saying he was a trained fish taxonomist. He had spent six years working on Lake Malawi for the Department of Fisheries. I took out my copy of Koning's Cichlid Yearbook and we talked for an hour, then started making plans to visit the Lake together as soon as the workshop ended. Dr. Kapute had something I needed but didn't have -- access to an off-road vehicle to drive up to the Lake, about a hundred miles North. We coordinated the trip with Dr. Wisdom Changadeya from the University of Malawi, who was also at the workshop; he said he could arrange for assistance from a research station on the Lake at Cape McClear.

We drove to Cape McClear on a Saturday morning, and Wisdom introduced us to two local research assistants at the station. We took their small wooden boat out about a mile to a spot by Thumbi Island. The research assistants jumped in and scuba-dived, manipulating a net about two meters tall and five meters long to catch dozens of cichlids, which they then put into a bucket on the boat for identification. I jumped in and snorkeled, which also worked well, because visibility was excellent and the rocky bottom was only about five meters down. Wisdom and Dr. Kapute stayed in the boat, because neither knew how to swim. I was thrilled to see hundreds of cichlids as soon as I stuck my head in the water – mainly *mbuna*, including *Metriaclima*, *Pseudotropheus*, *Tropheops*, *Petrotilapia*, but also *Capadichromis*, *Protomelas* and *Nimbochromis* species. Back on the boat, Dr. Kapute and the other

locals announced the correct scientific name of each fish we pulled from the bucket, before we looked it over and tossed it back into the Lake. We looked up the tricky ones in a copy of a Koning's *Book of Cichlids and All the Other Fishes of Lake Malawi*, which we had brought with us on the boat. We identified twenty species, including an amazing *Nimbochromis linni*, which I found very difficult to release from my grasp.

After the first outing, Dr. Kapute and Wisdom drove home, leaving me stranded in a somewhat remote paradise on a late Saturday afternoon – thrilled to be on the Lake, but concerned about my need to get to a business appointment on the other side of the Lake by Monday morning and to the airport by Tuesday. I investigated the possibility of hitching a ride on a series of pickup trucks and minibuses around the lake on Sunday, but this looked unreliable and time-consuming. Next I tried to find a fisherman who might be willing to transport me across the Lake, but this also proved difficult. Finally, after some whispered discussions, the research assistants told me that if I gave them fuel money and tips, they'd be willing to take me across the Lake in their little wooden boat. Great. Deal. I grabbed one of the assistant's snorkels and walked to Otter Point to see some more fish before it got dark. I worried a bit about the bilharzia that some say is problematic at this spot, but this was a chance of a lifetime and I wasn't going to miss it, so I waded in and swam around Otter Island for an hour. This tiny island is made of big boulders, and underwater there are thousands of *mbuna* grazing on algae. I could recognize many species, including *Metriaclima aurora*, *Melanochromis vermicorus*, *Labeotropheus trewavasae*, *Labeotropheus fuelleborni*, and *Aulonocara jacobfreibergeri*, but there were many more that I could not identify -- there are so many species, and of course most of these are not commonly seen in our hobby.

The next morning I snorkeled along the sandy shore, and was able to see a lot of sand nests built by various *Lethrinops* species, some of which were actively courting. I also was happy to find a couple of familiar *Cyrtocara moorii*, similar to the ones in my basement in Kirkwood. Next, the assistants and I headed out in their boat, and this time one of them lent me his scuba gear. I felt like the luckiest man in the world as I swam among thousands of the most beautiful freshwater fish on Earth. After the morning foray, we went back to the station, ate lunch, put my suitcase into the boat, and headed off towards the other side of the Lake. Because we were three men and a big suitcase, the little boat couldn't go much faster than eight miles per hour, and the trip took about three and a half hours. We floated by Zimbabwe Rock, Maleri Island, Chipoka and several other locations with names made familiar by fish books and magazines. As we got closer to our destination – Senga Bay, the assistants asked me precisely where they should drop me. Someone at the American Cichlid Association meeting a month earlier had mentioned that the famous fish collector Stuart Grant had a rest house in this area, so I asked them if they could find it. A few minutes later we pulled up onto a little beach by a rustic pier at Kambiri point and asked a guard if he knew the location of Stuart Grant's house. He said "here" and then helped me carry my suitcase up the beach as the assistants turned the boat around.

Staying at Stuart Grant's guest house and fish holding station was terrific. He charged only \$20 for a simple little room, and because I was the only guest, he gave me his full attention when he returned that night, explaining the operations of his ornamental fish collection and export business. He also let me use his cell phone to call Dr. Theu from the Ministry of Agriculture to set up a meeting spot for our Monday morning business meeting. Luckily, Dr. Theu said he could drive out to meet me at Kambiri point, and once he arrived he agreed with me that we should hire a boat and go out to Namalenje island to see some more fish before declaring the weekend over. As we headed out, a local guide on the boat said "What do you want to see?" I told him the Red Empress, *Protomelas cf. taeniolatus*, which I had read was present at this island. Five minutes after entering the water, I spotted a male in breeding dress, and our guide emerged two minutes later holding this fish in his net. We snorkeled throughout the rocks and again saw a mosaic of gorgeous *mbuna* and barracuda-like *Rhamphochromis* species, when

suddenly we heard the boat driver screaming at us: “GET OUT OF THE WATER!” I looked over at Dr. Theu who was clambering up onto the small rocky island with a look of genuine fear on his face. He looked back at me and said “snake” and pointed to a spot in the water only five feet from where we were snorkeling. “You gotta be kidding me,” I replied, but he wasn’t -- there was indeed a big yellow cobra treading water in that spot, lifting its head above the surface, spreading its hood, and threatening us! We were stuck on that little island for another fifteen minutes, afraid to go back into the water, because the stubborn and dangerous snake wouldn’t go away, despite the boat driver’s efforts to hit it with everything he could find to throw at it.

When we finally were able to get back onto the boat, we laughed about our little adventure, photographed the fish we had collected, photographed a plant I found to show Mike Hellweg, and then headed back to the mainland. It was now time to end the fun three-day weekend and get back to the objective of this business trip – Dr. Theu and I sat down to review our plans for a field trial of some new cassava plants developed at St. Louis’s Danforth Center and we swapped budget data. The following morning – Tuesday – Dr. Theu drove me to a Ministry of Agriculture crop testing farm, showed me the proposed site for the trial, gave me some official paperwork, and then dropped me off at the airport in Lilongwe so I could begin my trip back home to St. Louis. Despite the lack of serious planning, my weekend trip to Lake Malawi was successful and fun. I hope I don’t have bilharzia.

The Advantages of Live Foods Over Frozen & Prepared Foods

by Oleg Kiselev, Don Wilson, & Steve Bartling

reprinted from the Jan/Feb ‘00 *Cichlid Tails* of the Texas Cichlid Association

1. The uneaten food will not immediately decay and load up the filtration system.
2. Foods can be raised in controlled conditions and be free of pathogenic (disease causing) bacteria.
3. By using inexpensive media and techniques, costs are minimized
4. Most importantly, fish love grabbing things that try to run away (plus, fish owners love watching their fish chase live food).

Live Foods the Aquarist can Easily Culture at Home:

Baby Brine Shrimp are a food of choice for the newly hatched fry of egg-layers and other small fish. They’re also eaten voraciously by some surprisingly large marine fish and make a good substitute macro plankton for some filter-feeding invertebrates.

To hatch brine shrimp, one needs very little. A hatchery can be built out of almost anything, such as a 1-gallon plastic milk jug to 12 oz. soda bottles. Also, stores sell "shrimpolators" and plastic hatching cones. Everything works, but a container with a concave or conical bottom is the best because the water flow has no dead spots.

Add air tubing connected to a small pump, put a light over it and keep the temperature around 85°F if the shrimp are to hatch faster. Ed Warner's book suggests 3.5 tablespoons of un-iodized salt per gallon of water. He suggests using the cheapest salt available, like the water softener salt at \$3.00 for 50 lbs.

SF Bay Brand recommends hardening the water to improve hatching and shrimp survival, so adding some Epsom salt and a tiny pinch of baking soda may be a good idea. In order for the shrimp to

hatch and not die, the water in the culture must be vigorously turned over to keep the shrimp in suspension. This can be done by aerating the water just like everyone else, using a 12-inch length of rigid air tubing attached to a 3-inch tail of flexible tubing attached to an air pump. The rigid section keeps the hose from slipping out of the container. Aquarists using air stones may find they crud up and clog too often in this environment.

To get nauplii (hatched brine shrimp) out, turn off the air, put a piece of rigid air tubing (1/8") with 2-3 feet of flex tubing attached into the culture, and let the stuff settle. The shrimp egg cases will collect on the top of the water, the shrimp ought to sink to the bottom (if the water is not too saline). Then just siphon the wriggling shrimp off into a brine shrimp (fine) net, dump the lot into a cup of water and use an eyedropper to dispense to the fish. The nauplii will live in the tank for up to 24 hours.

Eggs can be bought in most aquarium and pet shops or by mail order. Eggs bought in bulk (such as 11b cans) will be much less expensive than the tiny ampoules sold in stores. The cans may be held in the freezer, with 2-3 weeks worth of supply held in a small, tight-lid jar.

Ed Warner insists that the eggs of brine shrimp need at least a year of incubation to become ready to hatch. He goes on to say that a low yield from a newly opened can of shrimp eggs may be due to insufficient incubation time and that the best hatches come from eggs that had been kept for a few years, with the eggs kept for 5 years in a vacuum packed airtight container giving perfect 100% hatch rates.

Adult Brine Shrimp - Just about all fish under 5" long will readily eat brine shrimp. Culturing: Don't bother. The yields from the cultures are very low and it's easier to culture Daphnia and buy live brine shrimp in the pet shops.

Those who REALLY want to try to culture brine shrimp should get a large closed top container (an aquarium, a garden tub, a baby wading pool), fill it with real or synthetic salt water and seed it with some green water and nutrients (fertilizer tabs or what have you) and wait for the water to turn yellow-green. Throw in some baby brine shrimp or live adult brine shrimp (available from the pet shop) and wait. Adding small amounts of brewers yeast, APR and other micro-foods will help promote the shrimp growth. It helps to put the culture in a brightly indirectly lit place to promote micro algae growth.

Daphnia - (also known as "water fleas") are tiny crustaceans of *Daphnia pulex* and *D. magna* sp. They are probably the most ideal food for the smaller fresh water fish. Daphnia do not die in the tank and will eat microscopic garbage while they live. They come in a variety of sizes - from hardly visible to over 1/8" This is a typical source of food for many fish in the wild.

Culturing: Daphnia can be cultured in everything from betta bowls to 32-gallon trashcans. Indoors can be feed various algae scrapings and tank sludge, as well as deactivated brewers yeast, powdered milk and APR (artificial plankton stuff from OSI). The best food is to use green water, and can be used in outdoor cultures. Green water can be grown using a weak solution of Mirical Grow and chelated iron in dechlorinated water, seeded with "pea soup" water. If water full of nutrients is left out in full sun, within weeks it will turn green from the airborne algae spores.

Blender-pulverized lettuce is rumored to work well in small amounts. Fry tanks and bowls can be seeded with Daphnia - the Daphnia eat the bacteria that may be hazardous to the fry and generally purify water and the fry will eat them as they get larger.

Freshly hatched fry can also be added directly into Daphnia cultures (about 2 fry per liter) and will feed at their leisure. However, fry kept in equivalent sized tanks and feed more intensively grow faster.

A shrimp net or a fine mesh net can be used to catch Daphnia. A clean Daphnia culture may be obtained from a local aquarium club or by mail order.

Daphnia can also be gathered from local lakes with a plankton net. An inexpensive net can be constructed by the do-it-yourself aquarist. Sew a conical fine mesh net with something like sheer

curtain material, and attach it to a circular piece of wire (such as a clothes hanger, bent into a circle). Add some weights to one side of the wire frame and hang it from a three-string harness. The net can then be slowly dragged behind a canoe or rowboat, in a lake know to contain Daphnia. The wire frame will keep the mouth closed, and the weights will act like the tail of a kite, to keep the net from rotating when it s dragged.

Such a setup can be remarkably productive, but the aquarist must be aware of parasites like Hydra and various carnivorous insects, like glass worms. Capturing glass worms are a mixed blessing, because larger fish will happily eat them, but the glass worms will also eat fry, if present.

Cyclops - Same as Daphnia, but predatory. Can damage eggs and very young egg-layer fry. Nauplii can be used like brine shrimp nauplii. Culturing: As Daphnia (but less numerous per the same volume). Often comes with the culture of worms or as contaminants in Daphnia cultures. Very hard to eradicate once they start breeding in the tank. Also mail order and club auctions, as Daphnia.

Mosquito Larvae - Most adult fish of smaller species love them. As long as the fish are bigger than the larvae, they'll eat them. Aquatic larvae of flying insects are the main ingredient in the diet of many small fish in the wild. Culturing: Very simple. Put a wide mouthed bucket or a barrel or a tub of water outside. Throw in small amounts of evaporated milk or grass clippings in a nylon bag to seed the water with the bacteria and promote the growth of infusoria, mosquito larvae's food sources; green water works well, too. Some people even use manure! If there are mosquitoes in the area, 2-3 weeks later there will be larvae in the water.

Another means of culturing is to use a child's wading pool with a small amount of grass clippings (no herbicides, please) added to encourage the water to stagnate, then wait for the mosquitoes to breed in it. After a couple of weeks, larger numbers of larvae can be scooped up with a coarse fish net. In this sort of "wild culture", one must sneak up on the pool to net them, so the larvae don't dive to the bottom when they detect movement.

Other methods include filling a 1-gallon bucket with garden pond water (tap water takes too long to age!), then adding a cup or two of fine soil and allow it to sit for a few days.

After the larvae begin to appear, one may use a large aquarium net to strain the water into another bucket, thus capturing the mosquito larvae that are now present. A major problem with these techniques is that neighbors may take exception to mosquitoes being cultured. However, provided all the larvae can be captured and used, an optimist might see it as a means of population control since the mosquitoes are no longer breeding in a pond somewhere where all control is lost.

Another problem is that if one adds too many larvae and the fish don't eat them all, there may be a significant increase in the mosquito population in your house, as the uneaten larvae pupate, then develop into mosquitoes. Wait for the little bloodsuckers to discover the container of evil-smelling bacterial soup (culture), or go find "floats" of mosquito eggs in a nearby lake or puddle. They look like rafts of eggs, all glued together.

Black Worms - These disgusting, bacteria infested stinkers are among the best sources of protein for the fish and are an excellent conditioning food for breeding preparation.

WARNING: Frequent feedings will cause the fish to become fat and impair breeding. Also, diseases are far more likely on a steady diet of worms.

ANOTHER WARNING: If too many worms are fed to the fish at one time, the worms will burrow into the gravel and hide, risking fouling the tank.

Culturing: May not be worth it. Worms will live on the bottom of the tank, eating scum and breeding. They can be fed banana peels. Filter water intensively. Collect them by sieving gravel with worms through a net. Messy, laborious and there are easier sources of protein.

Most aquarium shops have these uglies. (Tubifex are even uglier and stinkier and aquarist should not attempt to raise them. Its possible, but consider - they live and feed in sewage and may carry hepatitis or other potential pathogens.) If one buys tubifex, it is reported that since their, uh, "food" that smells, not the worms themselves, they may be successfully kept in cold running water without producing odor. Alternatively, 2 oz. of worms can be kept for up to three days in a medium sized bucket of cold water in the fridge.

Grindal Worms (very small worms) - These worms are small (up to 1/2") and can be fed to a variety of small fishes. Because of the way they are raised, they are totally disease free. They do not burrow as readily as other worms and live in the water for a few days. Great for bottom feeders and any fish fast enough to grab food sinking to the bottom or smart enough to look for it (i.e. just about all fish). Culturing: Get a plastic show box (available at Target for \$1), fill it with sterile potting soil and peat moss mix 50-50, or just potting soil, get it moist, perhaps nuke it in the microwave for 5 minutes to thoroughly sterilize it, let is cool, inoculate with a small starter culture of worms and some high protein cereal powder (Gerber, for instance) every time the previous feed disappears - and watch them breed! Cultures should be kept at 70°F or warmer. Put a piece of glass on the soil and the worms will crawl on it. The worms can be washed off the glass into a cup with clean water and dispensed into the tank with a large medicine dropper (1 tsp). If food is placed in troughs in the soil, the glass will be free of potentially water-clouding soil. One healthy culture produces enough to feed about 100 small fish.

Remember to keep the culture moist but not soaked and soupy. Spray it with dechlorinated water now and then. Cultures like this often get over run with mites and/or gnats. Both pests can be fed to the fish and are readily eaten, but soon become a nuisance. Should this happen, take some worms and keep them in a cup of water for 3-4 hours. This will drown the infestation and the worms can be used as a new starter culture. Old infested cultures can be salvaged. But it may not be worth the effort.

If the worms are not growing well, try adjusting the soil's pH by mixing a bit of baking soda into it to neutralize the peat's acidity. An interesting technique of culturing worms is used by some German killie breeders. They use open celled foam that sits in a tray filled with water and is covered by a piece of glass. This method is cleaner than the soil/peat one.

White Worms - (small worms, related to earthworms) These worms are up to 1" long and are good for feeding fish 3-6" long. Culturing: Similar to grindal worms, but these worms do not do well at high temperatures. If possible, keep them below 70°F; during the summer, they will survive if kept moist and in a cool place, i.e. a north facing carport. White worms can be grown in potting soil in plywood boxes, about 16" x 12" x 6" deep, with a close fitting, moisture-resistant top such as a sheet of glass. They will eat the same foods as grindal worms, but a number of sources suggest that white bread soaked in milk is a very good food for these worms. Another option found to work extremely well is to raid the materials heading for the compost pile, and prepare a mixture of old lettuce, fruit and breadcrumbs or oatmeal.

Add water and blend it, as thick as the blender can handle and still be able to turn over this soup. Add maybe a cup each week (it's mostly water anyway, which is needed to keep the cultures moist), in a small trench dug around the center of the dirt.

The medium typically and most successfully used by one of us (DW) is dried, rehydrated breadcrumbs with some brewers yeast added. Breadcrumbs are prepared by collecting old crusts (even moldy ones) and storing them in your freezer, then drying them in the oven at 175°F. The bread is then crushed into crumbs and, if stored in sealed containers (such as plastic ice cream buckets) the crumbs will last forever. When it is time to feed the worms, use a large bowl and mix the powdered bread with enough water to make a slurry, then ladle it into a trench in the culture. Use only as much as the worms will eat in a week. The amount of water in the slurry should be varied - when the worm culture tends to

dry out in the summer months, use a wetter mixture to replace the water, but if the culture is already too moist, use a drier mixture.

One might ask how long such a culture will last before going sour. It is a good question, to which there is no clear answer yet; one of us (DW) has 3+-year-old cultures which have been seen to produce as strongly as ever, without odor. Keep these worms in complete darkness. They will come out of the soil and coat the food, devouring it shortly and clustering in a writhing mass. The aquarist can pluck this mass of worms from the soil and use it to feed the fish. The worms will hide in the soil as soon as the light strikes them, so be swift about grabbing them! Another means of separating worms from the dirt is to get a tin can with both ends removed and fasten a piece of plastic window screening over one end (with string, an elastic band, or whatever works).

Sit it in some type of tapered glass container (such as a measuring cup) with water in the container, so the can sits above the water (1/2" between the top of the water and the bottom of the mess). Place some of the soil and the worm mixture in the can and place a light over the top (i.e. a gooseneck lamp, with one of those mini-spot bulbs). The heat will drive the worms out, through the mesh, and into the water. This takes a couple of hours or more. The worms come out clean, and can be fed to the fish directly, placed in a worm feeder, or frozen for future use. This works well for white worms, large and small, so assuming grindal worms can be grown in soil, it should work for them too.

However, if you don't mind getting your hands dirty, a faster, more effective means of separating them is to put the worm laden mixture into a container, add water, swirl the mixture, then pour out the dirt. The worms will collect in knots. Remove the knots by hand to another container, then continuing to swirl and pour off the dirt in both the old container and the new one. This way, clean worms can be obtained within minutes.

White worms should be fed to your fish with a worm feeder, so the fish can eat over time. They can also be placed directly into a bowl on the bottom of the tank, where they will remain until the fish eat them. This may apparently be particularly useful for killifish breeders, which have only peat as a substrate. Be careful not to overfeed by adding white worms directly to the tank; the excess will burrow into the sand, where they will be inaccessible to all but the most eager diggers, such as *Hoplosternum*. Where the aquarist has separated too many worms for one day's feeding; the remainder should be promptly frozen and used later.

<p style="text-align: center;">Front Man For The M.A.F.I.A. (Most All Frontosa Invite Attention) Ed Millinger</p>
--

I once knew a man named Steve.
He always had an extra pack of fish food rolled up in his t-shirt sleeve.
He had a tattoo on his arm that said frontosa,
And another that just said big blue.
When it comes to frontosa you gotta give him his due.
He's raised more than his share of fronts,
Once in awhile a real bruiser.
He transports them to auctions and meetings in his P.T. Cruiser.
Ask him if his success is brains or luck,
And he just might answer YUK, YUK, YUK.
For he's a fan of the stooges- Larry, Curly, and Moe
And he has no trouble getting his fronts to grow.

eddy

HAP Report

Mike Hellweg

Wow! October was a great month for the HAP! If you missed the meeting, you missed a great chance at some really rare aquatic plants at fantastic prices! Jerry Jost and Diane Brown both turned in a large number of species. Jim Miller turned in his first bloom, and John Van Asch turned in his first seed reproduction! John is now knocking on the door for Grand Master! Congrats to all!

Also I'd like to clear up a couple of things that arose at the meeting. Of note for those of you who bought the unidentified plant that John turned in as "Pennywort" and Pat was jokingly selling as "Nickelwort" in the auction is actually *Hygrophila corymbosa* "stricta".

And also of note to clear up the recent confusion with *Pogostemon stellatus* and *Euseralis stellata*, both of which were turned in at the meeting. This plant has become a popular plant with Aquatic Gardeners everywhere. Both species names are actually synonyms for *Mentha stellata*. This is according to the MO Botanical Garden Plant species Database, one of the most complete and up-to-date databases on plant species names that I have been able to find.

Member	Species	Common	Rep	Pts	Total
October '04					
Diane Brown	<i>Anubias barteri barteri</i>	Common Anubias	V	15	300
Diane Brown	<i>Anubias barteri nana</i>	Dwarf Anubias	V	15	300
Diane Brown	<i>Cryptocoryne cilliata</i>		V	15	300
Diane Brown	<i>Hygrophila corymbosa angustifolia</i>	Willow Leaf Hygro	V	5	300
Diane Brown	<i>Didiplis diandra</i>	Caterpillar Plant	V	15	300
Diane Brown	<i>Myriophyllum matogrossense</i>	Southern Milfoil	V	10	300
Diane Brown	<i>Nesaea pedicellata</i>		V	15	300
Diane Brown	<i>Myriophyllum simulans</i>	Fillagree Myrio	V	10	300
Diane Brown	<i>Mentha stellata</i>		V	15	300
Diane Brown	<i>Mentha stellata</i>		IB	15	300
Diane Brown	<i>Echinodoras tenellus</i> narrow leaf	Narrow Leaf Pygmy Chain Swordplant	V	10	300
Diane Brown	<i>Echinodoras tenellus</i>	Pygmy Chain Sword	V	10	300
Diane Brown	<i>Cryptocoryne wendtii bronze</i>		V	15	300
Diane Brown	<i>Cryptocoryne willisii</i>		V	15	300
Jerry Jost	<i>Anubias barteri nana</i>	Dwarf Anubias	V	15	275
Jerry Jost	<i>Marsilea crenata</i>	Dwarf Water Clover	V	15	275
Jerry Jost	<i>Riccia fluitans</i>	Crystalwort	V	10	275
Jerry Jost	<i>Mentha stellata</i>		V	15	275
Jerry Jost	<i>Hydrocotyle verticillata</i>	Pennywort	V	10	275
Jim Miller	<i>Echinodoras cordifolius</i>	Marble Queen Marble Queen Sword	IB	20	145
John Van Asch	<i>Saururus cernuus</i>	Lizard's Tail	S	5	490
John Van Asch	<i>Hygrophila corymbosa stricta</i>		V	5	490

November '04

Jack Berhorst	Cryptocoryne wendtii wendtii		V	15	110
Jack Berhorst	Sagittaria platyphyta	Fountain Sag	V	5	110
Charles Harrison	Echinodoras tenellus	Pygmy Chain Sword	V	10	185
James H. Miller	Hydrocotyle verticillata	Pennywort	V	10	170
James H. Miller	Myriophyllum aquaticum	Parrot's Feather	V	5	170
James H. Miller	Pistia stratiotes	Water Lettuce	V	5	170
James H. Miller	Vallisneria gigantea	Giant Val	V	5	170

December '04

Mike Hellweg	Aponogeton longiplumulosus		IB	10	2345
Mike Hellweg	Azolla mexicana	Mexican Fairy Moss	V	5	2315
Mike Hellweg	Cryptocoryne spiralis		V	15	2315

MASI First!

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

MASI HAP Year End Report for 2004

By Mike Hellweg

Wow! Another great year in the HAP, with no signs of slowing down!

This past year we had 106 total entries coming from 14 entrants, including 2 entrants who were new to the program. Great going, everyone! Just in case you are interested, the most often submitted plant this past year was *Mentha stellata*, with 4 submissions. There were more than a dozen first time submissions, too.

Several members earned higher level awards. Jim Miller earned the General Aquatic Horticulturist Award in March, and the Advanced Aquatic Horticulturist Award in May. Micky Lee earned the Master Aquatic Horticulturist Award in May. Diane Brown earned the Advanced Aquatic Horticulturist Award in July, and the Senior Aquatic Horticulturist Award in October. Jack Berhorst earned the Advanced Aquatic Horticulturist Award in November. Jerry Jost entered the program this year and earned the General Aquatic Horticulturist Award in July, the Advanced Aquatic Horticulturist Award in September, and the Senior Aquatic Horticulturist Award in October. John Van Asch earned the Master Aquatic Horticulturist Award in October.

Also this year, we updated the points for various species, and everything went digital. All of the reports, stats, etc. are now available online on our website under the HAP section. When we did this, we also updated the award structure and added new levels above the previous high level of Grand Master, just to keep things interesting and competitive for those who reach this level of award. Adjusting backward, Mike Hellweg earned the Advanced Grand Master Aquatic Horticulturist Award in February of 1999, and the Senior Grand Master Aquatic Horticulturist Award in August of 2003. Congratulations to all!

Hopefully, now that Jack (our trophy maker) has an award of his own, we can talk him into getting all of the plaques together and get them out to everyone soon.

...keep 'em green!

Active members in 2004:

<u>Entrant</u>	<u>Rank</u>	<u>Entries in 2004</u>	<u>Total species</u>	<u>Total points</u>
Bruce Mayhew	Advanced	1	21	170
Charles Harrison	Advanced	4	18	185
Derek Walker	Grand Master	4	112	1385
Diane Brown	Senior	8	25	300
Ed Millinger	Senior	2	29	300
Gary Lange	Senior	3	92	1065
Jack Berhorst	Advanced	3	12	110
James Miller	Advanced	18	21	170
Jerry Jost	Senior	24	24	275
John Van Asch	Master	4	45	490
Maureen Green	Grand Master	1	73	1245
Micky Lee	Master	5	42	540
Mike Hellweg	Senior Grand Master	16	170	2315
Rick Smith		3	3	15



We've got a place for you!

Missouri Aquarium Society, Inc.

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



Pump Trouble Or (A Pail Bails Out The Fam)
Ed Millinger

Jack and Michele (with one L)
 Went up the hill
 To fetch a pail of water.
 Jack fell down and hurt his fanny.
 Michele rushed to help and so did Danny.
 Their pond was low,
 And the waterfall slow
 (It just didn't have the right flow.)
 Once it was filled.
 The pump worked as billed.
 And the Berhorst fam began to chill.

eddy

MASI Annual Show Section

Gary Lange

MASI Show Rules for 2005

Entry:

Open to all with payment of entry fees. Junior entrants are encouraged. Multiple entries per tank allowed as long as they are compatible and easily distinguishable by the judges (i.e. male/female, color variants, different species, etc. For any schools with multiple males/females judges will pick a fish and judge it). Plant entries are allowed with fish entries in the same tank. **All entries are eligible for Class 1, Aquascaping**, without additional fee.

As a matter of ethics, entry must be the property of the entrant for at least 60 days before Show and/or must be work of Entrant. No hybrids, deformed, diseased, artificially colored (painted, dyed, or injected) or illegal fish or plants may be shown.

Display:

All fish are to be entered in flat-sided bowls or tanks a minimum of ½ gallon or larger up to 30 gallons (for larger tanks, entrant must provide their own proper aquarium stand). All entries are to be **covered with an appropriate cover and lighted. Sides and back of the display must be covered** with an opaque covering (i.e. paint, contact paper, or commercial background), and gravel or sand must be used on the bottom. Live plants are encouraged. Filtration and aeration are optional, but strongly recommended for the health of the entry. Air and electrical outlets will be supplied. Guppies, Killies, and *Betta splendens* may all be entered singly or in pairs in covered bare bowls or tanks of ½ to 1 gallon in size. Naturalistic artificial decorations are allowed in all entries, and a flowerpot or PVC pipe may be used if needed for the comfort of the fish. For Class #19 – Photography – For video/electronic media, entrants must supply resources for viewing their entry. Single picture entries must be printed for viewing.

Judging:

All entries will be sight judged based on appropriate standards for the fish being judged.

Decision of Judges and/or Show Chairman is final. Show Chairman may move entries to appropriate classes if entered in wrong class or if there are too few entries in class.

Awards:

First, Second and Third place in each Class; Best Junior Entry; Reet Thomas Outstanding Livebearer Award; Ralph Wilhelm Outstanding Catfish Award; Best Egglayer; Judges Award for the most Outstanding Entry; and Best Fish in Show.

MASI Show Classes 2005

1. Aquascaping

Must be a naturalistic aquascape; may include realistic artificial materials, will be judged on overall artistic impression and impact, must contain fish.

2. Domestic and Fancy Finned Egglayers

All “man-made” and domestic colors, veils, and long fins that don’t occur naturally: includes all popular color varieties and fancy finnage egglayers.

3. Guppies – Any “man-made” color varieties, domestic colors, veils and long fins that don’t occur naturally.

4. Domestic and Fancy Finned Livebearers

All “man-made” and domestic colors, veils, and long fins that don’t occur naturally: includes all popular color varieties and fancy finnage livebearers.

5. *Betta splendens*

6. Goldfish

Classes 7 – 16 are for Naturally Occurring species, subspecies and locality variants.

7. Wild Livebearers

8. Cichlids – New World

9. Cichlids – Old World

10. Anabantids Including gouramis and wild bettas

11. Characins

12. Cyprinids

Barbs, Danios, Rasboras, Minnows, and their relatives (except for Sharks and Loaches)

13. Catfish – Armored Cats (*Callichthyids*)

Members of *Corydoras*, *Aspidoras*, *Brochis*, *Hoplosternum* and their relatives

14. Catfish – All other Catfish

15. Sharks and Loaches

16. All Other Fish

Fish not included in any of the above Classes including killifish not entered in the SLAKA show.

17. Aquatic Critters

Includes fully aquatic Amphibians, Crustaceans, Insects, and other Invertebrates, both Freshwater and Marine

18. True Aquatic Plants

19. Photography

Must be taken by Entrant, includes photos, slides, video and electronic media

20. Catch-all – Collectibles (fish/aquarium related collectible; **Arts & Crafts** (must be made by Entrant); **Novelty** (Theme tank designed/built by entrant, must contain at least one live fish.

21. White Elephant Collectible

A fun class for all! Must be Fish or Aquarium Related, but it must be the *most awful thing* you can find!

45th ANNUAL SHOW ENTRY FORM, April 29th, 30th, May 1st, 2005
MISSOURI AQUARIUM SOCIETY, INC.

NAME(S): _____
(NOTE: ALL POINTS EARNED WILL BE AWARDED TO THE PERSON(S) NAMED ABOVE.)

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____ PHONE: (____) _____

STATUS (Check one): Hobbyist _____ Novice _____ Junior (entrants 16 & under) _____

CLASS	LEAVE BLANK	VARIETY OF FISH OR DESCRIPTION SCIENTIFIC NAME/COMMON NAME	DIMENSIONS OF EXHIBIT L x W x H (in Inches)	ENTRY FEE ***	CHECK (✓) IF AUCTION ITEM
				\$5.00	
If more space is needed, please use another sheet of paper			TOTAL		

*** ENTRY FEE: The entry fee for the above entries is \$5.00 for the first entry, thereafter \$1.00 per entry with no limit on the number of entries.

Entrant agrees to abide by all show rules and the decisions of the judges. All exhibits are placed in the Show at the entrant's risk. Entrant agrees to release the Missouri Aquarium Society, Inc. and the Stratford Inn of any liability.

Signature _____ Date

DEADLINE FOR SHOW ENTRIES IS THURSDAY, April 21st, 2005.

Mail form and fees to: MASI Show Entries
Klaus Bertich
9525 Caravan
St. Louis, Mo. 63126

Please call Gary Lange
314-837-6181
Email –
gwlange@mindspring.com
with any questions.

**R&J
FISH
FOOD**

**JIM
314-638-1134**

**MISSOURI AQUARIUM SOCIETY, INC.
45th ANNUAL SHOW AWARD BANQUET**

Our Annual Awards Banquet will be held at the Stratford Inn (the show site). Please arrive between 6:00 and 6:30 p.m for cocktails, dinner starting ~ 6:45. We've got a great meal planned, awards to present and the fantastic after dinner speaking duo of Charley Grimes and Spencer Jack.

Please return this reservation form to
Klaus Bertich
9525 Caravan
St. Louis, Mo. 63126
no later than April 21st, 2005

Please call Gary Lange 314-837-6181 (gwlange@mindspring.com) if you have any questions.

*

Name: _____ Telephone: (____) _____

_____ Number attending @ \$21.00 = \$ _____

Less: Banquet Auction Credit _____

(if you have auction credit, please make sure you indicate that you are coming to the banquet)

Net Amount Due: \$ _____

Return this form and a check payable to MASI in the net amount due to:

Klaus Bertich
9525 Caravan
St. Louis, Mo. 63126

DON'T FORGET --- Return by April 21st, 2005! to Klaus, address above

DON'T FORGET --- Return by April 21st 2005!

The Largest Livebearer Event in North America!

American Livebearer Association
Convention 2005
April 8 – 10, 2005
Econolodge East
Indianapolis, IN
Hosted by the Circle City Aquarium Club

Featuring Workshops, Speakers, Livebearers Only Show, Vendors, Rare Livebearers and others For Sale

Speakers include Charley Grimes, Jim Langhammer, Rusty Wessel,
Alexander Cruz, Joe Fleckenstein, and more!

For more information:
www.livebearers.org
or rjserva@juno.com

*note the new date!

MASI Annual Winter Auction February 20, 2005

Check in starts at 10:00 am; Viewing at 11:00 am; Auction starts at Noon.

Don't forget, to get the 70/30 split, you MUST register with John Van Asch and get a Seller's Number BEFORE the auction day. All Sellers registering the day of the Auction will receive a 60/40 split.

Once you've registered and received a Seller's number, there is no need to wait to get a Seller's sheet! You can fill out and print your Seller's sheet AND your labels online through our website. You don't even need adhesive labels. Just print your labels on a plain sheet of paper, cut them out and attach them to your items with clear tape. It's that easy!

Club Hopping

Steve Edie

Jan 15 – Urbana, IL: Champaign Area Fish Exchange - Auction
 Jan 16 – Arlington Heights, IL: Greater Chicago Cichlid Association – All-Species Auction
 Jan 29 – Bloomington, MN: Minnesota Aquarium Society – Auction
 Feb 20 – St Louis: Missouri Aquarium Society - Auction
 Feb 27 – Arlington Heights, IL: Greater Chicago Cichlid Association – Swap Meet
 March 13 – Milwaukee: Milwaukee Aquarium Society – Spring Auction
 March 18-20 – Hartford, CT: Northeast Council – Annual Convention
 March 19-20 – Lawrenceville, GA: Atlanta Area Aquarium Association – Spring Workshop
 Apr 2 – Cincinnati: Greater Cincinnati Aquarium Society – Auction
 Apr 8-10 – Indianapolis: American Livebearer Association – Annual Convention
 Apr 8-10 - Bloomington, MN: Minnesota Aquarium Society – Annual Show
 Apr 17 - Arlington Heights, IL: Greater Chicago Cichlid Association – Swap Meet
 Apr 22-24 – Melbourne, Australia: Australia New Guinea Fishes Association – Annual Convention
 Apr 29 – May 1 – St Louis: Missouri Aquarium Society – Annual Show
 May 1 – Milwaukee: Milwaukee Aquarium Society – Fish-O-Ramma
 May 27-29 – Arlington Heights, IL: Greater Chicago Cichlid Association – Cichlid Classic Convention
 July 21-24 – Ft Worth, TX: American Cichlid Association - 2005 Annual Convention
 Sept 18 – Arlington Heights, IL: Greater Chicago Cichlid Association – All-Species Auction
 Oct 23 - Arlington Heights, IL: Greater Chicago Cichlid Association – Swap Meet
 Dec 4 - Arlington Heights, IL: Greater Chicago Cichlid Association – Swap Meet

Breeders Award Program Report

Steve Edie

Member	Species	Common	Pts	Total
Oct 2004				
Mike Hellweg	<i>Boraras brigittae</i> *	Brigitt's Rasbora	20	1917
Nov 2004				
Mike Hellweg	<i>Malpulutta kretseri</i>		15	1932
Mike Hellweg	<i>Xiphophorus alvarezi</i>		10	1942

* = First MASI species spawn (5 point bonus)

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

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

The Computer Page

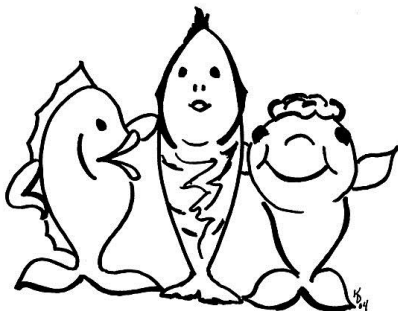
Steve Deutsch

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

Addresses are only printed with permission of the owner. If your address is not printed and you would like it to be, please email me at fishfan@i1.net. If you would like yours removed, or if it needs correction, also please email me.

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Membership

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

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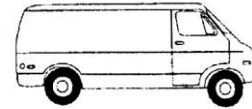
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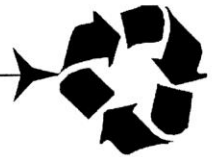
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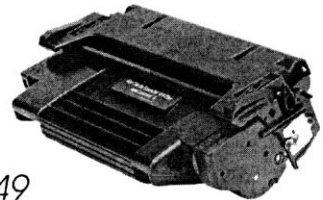
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