

# The DARTER

March – April 2004

**Missouri Aquarium Society, Inc.  
St. Louis, Missouri**

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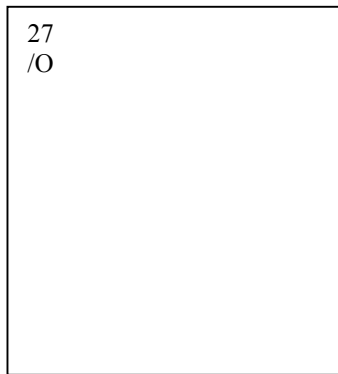
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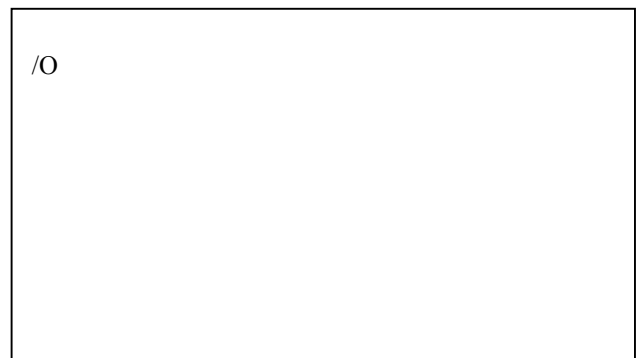
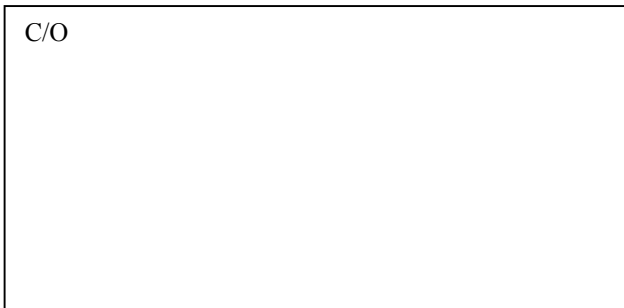
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# Places to Be Things to See

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.

## **FRIDAY April 23 through SUNDAY April 25 MASI ANNUAL SHOW at the Stratford Inn**

THURSDAY, May 20, 2004

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

Program: Mike Hellweg on Raising Fry

Bowl Show: OPEN

SATURDAY, May 22, 2004

Executive Council, 7:30 PM Location TBD

Program: ?

Bowl Show: OPEN

THURSDAY, June 17, 2004

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

Program: ?

Bowl Show: OPEN

THURSDAY, July 15, 2004

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

Program: Mark Soberman on *Raising and Breeding Corydoras Catfish*

Bowl Show: OPEN

SUNDAY, August 15, 2004

MASI Auction, All Species @ Stratford Inn in Fenton

Viewing at 11:00, Auction at noon

SUNDAY, November 21, 2004

MASI Auction, All Species @ Stratford Inn in Fenton

Viewing at 11:00, Auction at noon

# President's Report

Jack Berhorst

Well, as I near the end of my term as President I would like to thank all the people who made it such an enjoyable time. I would like to especially thank my fellow council members Gary Lange (Vice President **and** Show Chairman), Klaus Erich, (Treasurer), Angela Heller (Secretary), Pat Tosie and Steve Deutsch (who split the editor job for the 2003/2004 year), Jon Van Asch (Auction Chairman). The non-officer positions included Bob Buckles, Mike Hellweg, Steve Edie, Charles Harrison, Kathy Deutsch, and Roy Brandhorst. This group also heads the majority of the committees and club functions, such as the BAP, HAP, Membership, Exchange editor, Corresponding, Darter Printer, Historian, and Refreshments.

I would also like to thank all those who stepped up this year to help when the club needed it from posting flyers at shops to running the bowl show all help is appreciated.

If this Darter reaches you before the April Meeting, we have the candidates for member of the year listed with their nomination paragraph, but since they are all deserving, I will list them here Steve Edie, Randy Ison, Pat Tosie, Jon Van Ashe, Gary Lange and Charles Harrison. Thank you and congratulations to the winner.

Quickly approaching is the big time of the year for the club... The Annual Show, the club picnic and the chance to go to big National and out of town Shows and conventions. This is a great time to get out and meet other people in the fish hobby. Check the Darter and Website in the club hopping section for the upcoming events.

Another very important note is for those who have not been to meeting lately we are meeting in the main church building, not the building at the back of the lot. The church needed the building to house some visiting missionaries. So, they are letting us use their main building.

Thank you all for your time and remember to keep them swimming.

Jack Berhorst

# Editor's Notes

Steve Deutsch

Like the rest of the St. Louis fishkeeping community, I was saddened by the loss of Ralph Wilhelm. Ralph was one of the first people we met in MASI, and his was one of the first fish rooms I saw. I remember looking at tank patches, air systems, PVC pipe constructions for catfish territory, and many more things that were new to me. I must have been obvious in my mental note-taking, because Ralph laughed and said to help myself to all the ideas I could steal. In truth, no one ever had to steal an idea from Ralph - he was always willing to share, especially if there was a dollar or two to be saved from a clever way to make something. We have had tributes to Ralph published on the Fishheads email list and on our web site. I am re-printing these in the Darter for those who aren't on line, and those who are and want the tribute in a more permanent medium. Ralph, you truly were this clubs "outstanding cat".

Well, the first Darter made it out, so now I'm trying to refine the process. Some of the layout was affected when transferring from my PC to Charles' Mac. I think he fixed everything so your Darter looked fine, but some fonts worked better than others. So, for you authors, I'm going to try Times New Roman, 12 point, as my default. If it works this time I'll stick with it. Margins are top and bottom .7", left and right .75"

Last issue I mentioned plans for an author's incentive. 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 wining, but any author has a chance at the drawing. Only MASI members are eligible.

Kudos to Darter author Mike Hellweg. This article "A Rough Ride with a Tiny Horse, *Hippocampus zosterae*, The Dwarf Seahorse" was reprinted in the Mar/Apr 04 issue of The Youngstown Aquarist.

I'm starting to get a few articles in backlog, which is great. I still would like to hear from more new voices, so if you have ideas, write them, or if you're not sure email or call me. If you use a computer, email articles to me at [fishfan@i1.net](mailto:fishfan@i1.net) as Microsoft Word attachments, plain text attachments, or email text; or give them to me on a disk at a meeting. If you don't use a computer, type or write the article and give it to me at a meeting, or send it to me - my address is on the 2003-2004 MASI Officials page in the Darter.

Submittal Deadlines for the remaining issues this year are:

May/June - May 1

July/August - June 15 (All caught up here, with your help)

September/October - August 15

November/December - October 15

# Remembering Ralph Wilhelm

September 23, 1921 - March 3, 2004

Mike Hellweg - Gary Lange - Kathy Deutsch

(Reprinted from [www.missouriaquariumsociety.org](http://www.missouriaquariumsociety.org))

## **Ralph Wilhelm**

by Mike Hellweg

Angela and I have only known Ralph for about 18 years, but in that time he became like a member of the family. We met Ralph at the first MASI meeting that we attended. He was club President at that time, I believe. He got me involved with the club by asking me to sell raffle tickets at that first meeting, and at subsequent meetings after that. He called me "Steve" for a couple of years (just to annoy me after he learned my name really was Mike!), and was convinced that John Beck and I were brothers! Within two years, he had talked me into running for Executive Council. He was again President, and, even though I lost that first race for Council, he soon appointed me to fill an open seat on the Council, where I've served ever since. Ralph had a way of getting you involved in the club that was infectious. He invited people over to his house after every meeting, and held a "mini meeting", complete with refreshments, that often lasted several hours into the night.

His was the first real fishroom that I ever saw. I was amazed, even if my head was a little sore from hitting the rafters a few times as I stood up from looking into another amazing tank. He had a particular love for catfish, especially a really nice *Synodontis eupterus* that was his "pet" among countless other fish. Our club's highest catfish award, the Ralph Wilhelm Outstanding Catfish award, is named after him because of this love of catfish. Every year, when the award was presented at the show, the speaker would invariably call it the Ralph Wilhelm Memorial Award - and Ralph would chime out "I'm not dead, yet!" or "it's not a memorial award, I'm still alive!" to a chorus of laughs.

I'm not sure when he joined MASI, but he was an "old timer" when I first joined the club. Ralph is the longest continuous serving member on our Executive Council in club history, serving for 20 consecutive terms before retiring. He served as President, Vice-President, Secretary, Treasurer, Show Chairman, Librarian, Exchange Editor and several other positions in his many years with the club. Most folks remember him for serving seemingly forever as the Auction Chairman. He loved Auctions! He even traveled to several other clubs in the Midwest and served as auctioneer for them!

Ralph kept and bred countless fish. He is still one of the club's top breeders, even though he hadn't turned in any spawns in over a decade. He never met fish he didn't like. He got me interested in Killies, and he and I split several batches of Notho eggs from a hobbyist in Czechoslovakia over the years. He also ran the first concession for flake foods, even before Reet and Jim got started! Ralph collected aquarium literature, and had a special fondness for the Exchanges from other clubs. He created books from article clippings from those Exchanges, and maintained them for many years.

Ralph was the first person I knew who kept planted tanks. Every tank had live plants in it. I follow his example to this day. He insisted that this was one of the reasons why he was so successful at breeding various species. He followed the K.I.S.S. principle and stuck with plants that grew well in his tanks: Java Fern, Java Moss, a few species of Crypts, Indian Fern and Water Sprite, and Wisteria. His tanks looked just like the pictures I remembered from older aquarium texts. His interest in plants and planted tanks sparked my own interest, and his push for starting an HAP in MASI is what got me to put the program together back in 1991.

Ralph turned recycling tanks into an art form, and had more glass in his basement than many window repairs shops have in their workroom. He built and designed many unusual tanks, including his famous double 10's, \_ 10's, and an odd \_ 10 that I got from Rosetta after Reet passed away. He even designed a



slide program on building a tank, and gave a "hands on" presentation on building a tank at one of our shows. His silicone seamed glass tops are still working on several tanks in my fishroom, many years after he helped me design them. He would visit the wholesalers (there used to be 4 of them in St. Louis) and buy their cracked tanks for a song. He would then refurbish these and sell them.

But the best thing about Ralph was his infectious personality. He was loved by just about everyone who ever knew him. He helped countless members to get started in the hobby, helped ours and other clubs to build their treasuries with his auctioneering skill, and helped our club in ways that will last long after he has left us. I don't think there is a member on the Executive Council that wasn't a close friend of Ralph and benefited from his "fishy" knowledge at some point.

In 1997, if I remember correctly, MASI honored Ralph with a Life Membership. He was tickled pink to be so honored, even though he said he didn't think he really deserved it. We have only bestowed that honor 3 or 4 times in our entire 45-year history. He was one of only a handful of people who have truly earned that honor by his service to our club, it's membership, and the hobby, always done without expecting anything in return; though he did like to get a hug from the ladies every now and then.

You could always see that twinkle in his eyes whenever he saw you. A smile always followed his "Hello, Mike". Angela and I last visited Ralph in December, and he was looking better than he had in years. He was excited to be getting a TV in his kitchen, even though he complained the new Star Trek wasn't the same as the old ones. Always the Trekkie (which he preferred to Trekker) his favorite was Deep Space Nine and his favorite character was Dax.

I'll remember Ralph for many things, especially for serving as my Mentor as I learned more and more about the hobby and the club. I'll miss those conversations we had about everything from Walgreens' high prices back when I worked for Walgreens, to what fish people were keeping now, to who was doing what in the club. But I know his influence will be around for a long time, and members who never met Ralph will benefit from his service and knowledge as it was passed down to us. Hopefully we can live up to his example and pass it along to the next generation. That would be the most fitting tribute to our friend Ralph.

## **Ralph Wilhelm**

by Gary Lange

Even though we knew the end was coming soon it was very difficult to accept that Ralph was finally gone. A flood of thoughts came over me as I thought about what he meant to me and many other long time members of MASI. I hope you don't mind if I share just a few of them with you.

If Ralph wasn't the first MASI member to talk to me at my first meeting he was at least the first to express an interest in what sort of fish I was keeping. I was a wet-behind-the-ears aquarist and even though I had been keeping fish for a long time I was eager to learn how I could "actually" spawn and raise fish. I would bet that our first conversation was about Corys as I had just gotten some and was probably the reason I was pushed in Ralph's direction. With Ralph's advice and encouragement I was soon spawning albino aeneus, not a real challenge but a thrill to the kid who had only bred livebearers and angels before. With his encouragement I eventually went on to be the first person in the club to spawn Corydoras metae, a rare fish at the time. Ok, so nobody else except Ralph cared that much about catfish (they all wanted cichlids) but it was still a great thrill. I also learned that it really didn't matter what was hot, I wanted to play with the interesting fishes.

Ralph also kept some very strange fishes called "Killifishes". He kept them in tiny tanks with tight-fitting lids and several were loaded with dirt in one corner of the tank. He would show me bags of this "dried peat" and tell me that there were eggs in there and they would be ready to hatch in 2- 5 months. Yeah, right. Ok so Ralph was right about a lot of other things too. Soon I was playing with Nothos and Cynolebias and storing away dirt in my basement. Ralph and I later went on to become part of the "founding members" of SLAKA, the St. Louis area killifish group. I probably wouldn't have ever gotten interested in them if it hadn't been for Ralph.

Not too long after that Ralph gave me a good deal on a variety of cichlids that he called "Julies". He always had 2-3 species going and they were his lazy "money fish". The parents did all of the work and he would just pull the caves apart once in a while to capture some of the older fry. It's funny now that I think of it all of the great deals that I got from Ralph's fishroom. I guess in a lot of ways he was very responsible for my interest always in "something different".

Ralph's fishroom was also the very first fishroom, outside of a petstore that I had ever seen. It was pretty amazing and contained a varied assortment of fish. Although I knew my fishroom wouldn't be exactly like Ralph's I just knew I had to have one! I guess this brings me to something else that I remember about Ralph, that he was frugal. Ok you might even say cheap, but he was really proud of it! The reason my fishroom wasn't going to be like Ralph's was that he had way too many cracked tanks for my tastes. He said it really didn't matter, just put the cracked glass towards the back and who would know the difference. Well his patches held really well and he typically got a \$60 tank for only \$10 and the cost of the patch. For the longest time Ralph was MASI's go to guy if you had a leak in your tank. Most anyone can fix a 10-gallon but it takes real knowledge and skill to break down and fix a 90-gallon tank. He used this skill to help pay his fishroom expenses. If you wanted some cheap tanks, go see Ralph! Ralph also taught me that you don't have to buy all of your fish stuff at the Petstore. Plastic Cool whip containers make perfect fry hatching tanks and scrunge pads from the grocers work a lot better than the pads at the shop. If you kept your mind open you could find all sorts of handy items for your fishroom at the dime store and the local Schnuck's.

Many of you don't remember but Ralph was also our moneyman, the one who runs the auction. He spent a lot of time getting ready for the auctions to make sure that our club had enough money to keep things going. And in spite of all of the work that Ralph did for the auction he always managed to enter items in the spring show. Fact was he won a lot of those trophies too. I guess it was some ten years ago that Ralph had his first health crisis. The Executive Council decided that we would name our "Best Catfish" award for him. I didn't tell anyone at the time but I entered several catfish that year as I was determined to win that first "Ralph Wilhelm" award. I did win that first one. When his crisis had passed and we were reasonably assured that he was safe for the time Pat Tosie or I would tease him about the "Ralph Wilhelm Memorial Award" when we would talk about the trophies. Ralph would always shout out from the back of the room, "I'm not dead yet" with a laugh!

I'm sure if I think long enough there will be other things I can tell you about him but I'm sure others have their own similar stories. Ralph Wilhelm will certainly be missed but never forgotten. So long my friend.

### **A Way Too Short Tribute to a Long Time Friend**

by Kathy Deutsch

When I lugged my entire entourage of family into that first MASI meeting, Ralph was one of the people who made me, my husband and 2 kids feel truly welcome. He always asked what I was keeping. More importantly, he asked my kids what they were keeping-and he listened to them. Ralph did so many things for our club. But in more personal ways, he did kindnesses for people. He gave me so much information on keeping fish. He also tried to encourage me to be a frugal fishkeeper. Ralph had recycling-from old coffee cans to old pipe-down to a science. Once in his fishroom, he needed a rubber band. He bragged about the good deal he got years ago on this giant-sized bag of rubber bands. A lifetime supply, he commented. He opened the jar he kept them in, tried to pull one out-they had stuck together. After prying one good one out, he re-closed the jar. "Well", he said, "if I dig around, maybe a few more in there are still good". Then he looked at us with a smile and concluded, "still, they were a good buy". When Ralph decided he couldn't get to his fishroom so well anymore, he sold us his catfish. Upon further reflection, he figured we needed some of his catfish books, too. We left his house loaded down with fish, books, and various stuff he felt we needed-including old styros and peat. Ralph's catfish are fine, enjoying a 94 gallon tank. I was so proud when I won the 1995 Ralph Wilhelm award for my

blue-eye plecostomus. I had Ralph autograph the award, which amused him greatly. That award hangs in my kitchen so I can see it every day. Ralph and I had a wonderful talk recently. I refused to acknowledge that it was a kind of goodbye.

I miss you, Ralph.

## **Tri-County Tropical Fish Society**

Our friends at TCTFS, both by displaying the tributes to Ralph at their auction, and by a \$50 donation to the Ronald McDonald House in Ralph's Name also remembered Ralph.

# Auction: A Big Pat on the Back

Klaus Bertich

Our February auction is over and it was very successful. It was also a lot of work done by a lot of people. I would like to thank all of the people that helped me out. As treasurer I can say it takes a lot of paper work to make reconciling the auction a success. First the people at the back table have to keep track of the items being sold. At check out time all of the items sold are added up using the two-piece buyers receipts, and the money is collected. Along with that all of these sales have to match with all of the sellers sheets. To make the auction a success a lot of things have to happen. First we need sellers. I would like to thank all of the sellers that brought and or donated items to the auction. It all starts here. If the bags aren't marked right and the tags don't stay on the bags we have a problem. We had a minimum problem in this area at this auction.

The runners did a fantastic job. I would mention all of the runners but I don't even know how many runners we had. So to all of you, Thank-you. My help at the back table. Neil Van Asch was such a big help. He helped register most of the buyers and then helped to sort out the buyers' tickets and fill out the buyers sheets. That took a big load off of me. Charles Harrison ask if he could help a little, little did he know what he was getting in to. He also helped sort out the buyers' tickets and fill out the buyers' sheets. At the end of the auction he also helped check the buyers out. I'm sorry Sue for having stolen Charles from you the whole day, but he sure did look he was enjoying himself. Thanks Charles. Jack Berhorst came to relieve Neil Van Asch, and he handled a lot of small problems as they came to be, like what do I do about the silent auction stuff and the wrong numbers on the tickets, and on and on. Jack also came over to my house and helped to reconcile the whole auction. This was small task. Thanks Jack. John Van Asch ran a very good auction and he had a good crew at the front table writing up the sellers tickets. The auctioneers did their usual good job of selling, explaining, and keeping the auction going at good clip. We sold a little over 500 items, had over 90 buyers and about 50 sellers. Last and not least Mike Hellweg. Mike was the key to all of the checks getting sent out as fast as they did. I was able to put the whole auction to rest one week after the auction was over, all but one seller and that was solved a few days later. Jack set up a program in Access that combined all of the sellers information and then sort it by sellers last names, and total sales made. Mike keyed in all 500 items, deducted items 19 & 20, deducted the \$1.00 items took 70% of that total and that is what the checks were made out for. Seems like a lot of work, and it was but it all happened in one night. We did very well financially at this auction, but even we didn't the work is still the same. So once again thanks to every one that helped make this auction a huge success and I hope I didn't leave someone out.

# **Arnold Pet Palace**

**Basement Sale!**

**While supplies last!**

**636-296-1711**

**Jim is finally cleaning out his shop's  
Basement and M.A.S.I. members can take  
advantage of GREAT PRICES!**

**Tons of used tanks, stands, equipment,  
cages, and more - even a couple of Bikes!**

**Tanks are 40 gallons or less in size.**

**Several 20-gallon Breeder tanks**

**- perfect for raising out fry!**

**Somehow he even has a complete Marineland**

**M.A.R.S. (Marineland Aquatic Retail**

**System) with tanks, stands, lights,  
integrated filters and even a chiller!**

**Don't forget to take advantage of Jim's  
generosity upstairs, too! M.A.S.I. members  
get 10% off of their regular priced  
purchases!**

# In Defense of Snakeheads

## My Experience with *Channa orientalis*

by Kevin Korotev, Milwaukee Aquarium Society  
kevinkorotev@netzero.net

Snakeheads are not monstrous eating machines that will cross highways to kill your dog. It is a shame that during this last summer of 2002, this and other equally ridiculous things were being said about a FISH. You heard it. You saw it on TV. We laughed about it at an MAS meeting. I even had to face an email tirade from a young hobbyist in Northern Wisconsin after listing some of these fish on the Internet auction site: AQUABID. In his mind, to even OWN the fish was an atrocity. Here's some more, as written by WASHINGTON POST reporter, Anita Huslin:

*"U.S. Secretary of the Interior Gail Norton today will propose a ban on the importation of 28 species of the voracious air-breathing, ground-slithering fish known as the snakehead, following the discovery of a thriving school of the creatures in a suburban Maryland pond. Native to the Yangtze River region of China, the fish has appeared in at least seven states and has upset the natural order by eating virtually everything -- plant and animal -- within its reach."*

Ignorance is a dangerous weapon.

A mated pair of *Channa orientalis* and a couple dozen of their fry can be comfortably housed in a 30-gallon tank. They ARE hearty eaters, but the male HAS to eat when he can. He does not eat at all during his month long mouth-brooding and fry guarding ordeal. As Anabantoids, they will routinely rise to the surface for a gulp of air...and the stories of them "flying" are only half-lies, as these fish *are* incredible jumpers. But this behavior is generally limited to courtship and the territorial squabbles that occur during their adolescence. Ideally and inevitably, there will be only one female in a tank and the one male she chooses as her mate. She will kill those she can't eject. If you DO leave room for escape, you WILL find snakeheads on the floor. If you catch them soon enough, they will survive for a time unharmed...but not in the same tank.

Half of this description could fit nearly ANY large cichlid!

I came upon what became my current pair of *Channa orientalis* at Gary's Pets 'n' Things, in Cudahy. They were half-grown at 3" and peacefully occupying opposite corners of a tank. It surprised me to see just 2 because although Gary had been getting youngsters regularly from Yohan Fernando, he'd been getting them in groups. "Why are there only 2 in this tank?", I asked. The response was a description of the activity I'd seen in my own tanks that had already cost me 2 sets of juveniles. It seems there HAD been 6 or 7 fish the day before, but when Gary entered the fish room on THIS day, all but the remaining two were scattered on the floor like cheap cigars at a mafia wedding. This was probably a disappointing vision to him, but it meant something different to me: a probable pairing! Upon inspection, it was clearly obvious that the two remaining fish were the now dominant female and her chosen male.

Once the female has chosen her mate and ejected all others, the whole attitude of the tank changes. The fish calm down, seem to interact and actually ENJOY each other. Their sexual difference becomes obvious as they quickly mature to the time of their first spawn. She is the larger, duller colored one. He is the smaller, colorful one. *Channa orientalis* grow from spawn to spawning in less than a year.

I have seen the entire spawning process with 2 different sets of adult *Channa orientalis*. It seems important to mention this because each pair had their own unique personality. One set was pretty

flamboyant; flaring and wiggling and swimming circles around each other. I once saw a female in a shimmy-shake exercise that reminded me of a little puppy in a "full-body wag". My current pair is considerably more discreet. They approach each other and simply agree it is TIME.

Regardless of the approach, the actual spawning is typically Anabantoid. Like the Betta or Gourami, the two fish wrap half-circles around each other and as the s-q-u-e-e-z-e begins, eggs and milt are mixed to fertilize the eggs. These eggs float to the top where, once he's regained his energy, the male collects them in his mouth for a two-week incubation. After he expels his two dozen or more fry, he guards them relentlessly for another 2 weeks. Food is shunned...and the tank will erupt if anything live is flipped in as food for the female. The snake-ettes pretty much hug the bottom, near him, for about a month. If he has a good hiding spot during this time, you will rarely see him. When he does appear, it will only be because his fry have begun roaming and he is ready to start eating again. This is the time to see him in all his colorful splendor...which he will display as long as the youngsters remain in the tank for him to guard. During this time, it is said that the female of some species will lay unfertilized eggs for the fry to eat. The orientalis does not behave this way. On the whole, she ignores the fry.

I believe you could keep *Channa orientalis* in Milwaukee tap water, but I didn't, preferring to mix it with R/O at 50%. As Anabantoids, these fish prefer still water, but with PVC "retreats", they weren't discomforted by a power filter sweeping water lengthwise through a 30 gallon long. The temperature was a constant 78-80 degrees. You will notice an "attitude" coloration, particularly in the female, if you change too much water at once. Red (leaf) worms from the local bait shop seem a particularly favorite food. I feed them whole to the adult fish, but did chop them up some when they were younger. Other foods to try are: feeder guppies, freeze-dried krill, frozen bloodworms, mosquito larvae, crickets, small crayfish and simple floating pellet food. This last item is not a favorite once you've fed any of the others, but they will eat it in a pinch.

I hate to imagine how much damage this fascinating species suffered from the bad press this last summer of 2002. There will always be people with disparaging words for those things they don't understand. But in this hobby, with the exchange of ideas being the primary way that people learn; I hope this little article helps educate those that otherwise might continue to spread lies about this truly unique and fascinating fish.

## Pollen

Maureen Green

It's the stuff that makes St. Louis known as the allergy capital, but it also enables us to keep coming up with plants that mystify everyone.

Outside, insects do the job for us and if you want to do it inside, like Derrick said, use that artist paintbrush. If you have two plants that won't bloom at the right time, and want to cross pollinate, put the pollen in a paper envelope, label, seal, again use a silica gel packet in the bottom of a plastic bag, insert the envelope, seal and refrigerate. It will keep the pollen fresh for several days.

Remember, that plants are like fish; some of them prefer a neutral ph and other a more acidic ph (some of them will alter the ph for you). Some of them require a cooler temperature and others warm. Try to match your plants with your fish.

# Member of the Year Nominations

**Steve Edie** - nominated by Mike Hellweg

I would like to nominate Steve Edie for member of the year in 2003. In addition to helping the club at most of our functions, Steve served as host for a couple of our speakers throughout the year. Steve served the club on the Executive Council, too. But most of all in 2003, Steve spent many, many long hours of typing converting all of our old BAP records from paper to electronic format. He then spent many more hours researching each and every scientific name to make sure that all of them were correct. Finally, he made sure that our antiquated points system was updated and fair for all members. Please join me in voting for Steve Edie for member of the year for 2003.

**Charles Harrison** - nominated by Steve Deutsch

MASI has been in a period recently where it seems like a few people have been doing most of the club work. When the plea was made for more people to share the load, Charles responded. He agreed to serve on Executive Council. While many people might say what someone should do, Charles has offered what he would do. He has helped get many of our MASI forms on-line, and when Darter costs were getting too high, temporarily causing us to reduce the number of issues, Charles volunteered to take over printing himself. This is a significant commitment of his time and a significant savings to MASI.

For helping when the club needed, for being a worker rather than a critic, Charles Harrison deserves your consideration for Member of the Year.

**Gary Lange** - nominated by Klaus Bertich

Member of the year is a hard nomination to make. But Gary Lange made that easy for lots of reasons. At our meetings he is always in the middle of things. Ask him a question about almost anything and he will usually come up with a valid answer, even if it's about something not in his field. Gary has kept a lot of different fish over the years so his experience with large variety of fish is something he likes to share with every one. He also raises some of the best looking plants around. He is very generous with his plants at the club meetings. Ask and he will bring what he can to the meetings.

First a little background on Gary Lang. First of all he is a chemist. If you ask about water quality or what is our water like coming out of our pipes he has done the research and can tell you that the water up in the north side is a little different than that of the water in the south side of the metro area. Water treatment for chlorine removal was another subject that he put out on the MASI web site, that one got me to use a different de-chlorinator and my fish are doing a lot better. Gary also lets you do things on the cheap; I'm not saying that Gary is cheap. He just does things the most economical way. Cheap is not always the answer. Sure you can spend more but your not going to get more. These are a few of my personal reasons why I have chosen to nominate Gary to be member of the year.

Gary has worked real hard the last two years as the club Vice President. He has brought us speakers that most of don't even know. He is also, among other things the show chairman. He has brought back the super bowl. He has increased the interest of the club members in the annual show. At the 2003 show he filled in two speaker spots when those speakers canceled out on us. He is also our show photographer.

He spends a lot of time on the day of the show taking pictures of all of the winners and then getting them into a format that we can see and enjoy at that night's dinner, no small feat.

For the 2004 annual show Gary is bringing to us Ray Kingfish Lucas, among other speakers. I have heard Ray Lucas, and I have seen what he brings to a show he comes to. Ray sets up a manufactures booth with a ton of products he represents. At the auction that Sunday, Ray will more than likely auction most, if not all of the products away himself and all of the money will be a total donation to our club. So if you want, or need any of Ray's stuff you have to be at the auction early.

Overall Gary Lange has done a lot to promote all of our programs in the club, he has been a club officer in one capacity or another for a lot of years. His dedication to our club and hobby is second to none. His energy level for the fish hobby is endless. He is proud of our club and all of our members. He promotes the fish hobby better than most of the fish magazines I've read. I am proud to call Gary a friend, fellow fish nut and of course I'd like him to be called member of the year.

**Pat Tosie** - nominated by Ed Millinger

I nominate Pat (Tosie)

A wearer of many a hat.  
For Starter he for  
Years has edited the Darter.  
Each month the attendance prizes he brings,  
So you can have something free with no strings.  
Four times a year  
He is an auctioneer.  
And every spring at our show  
He enters many fish you know  
So for your consideration I present Pat  
Who I feel should wear a member of the year hat.

**John Van Asch** - nominated by Kathy Deutsch

John has been a MASI member for 22 years. He's been on Executive Council for 15 years. John has held the club positions of President, Vice-President, and his current post - that of Auction Chairman.

John Van Asch has done all this. But I think he should be member of the year not just for being auction chair. When the auction runs smoothly, it's because of John. If things go badly, john takes the blame. He does so much before, during, and after the auctions - from the paperwork to checking fish, and answering questions. And answering questions. And answering still more questions. He does all this with a smile, and a pleasant attitude, and an infectious spirit.

For member of the year, I nominate John Van Asch.





**R&J  
FISH  
FOOD**

**JIM  
314-638-1134**

12/03

# BAP Report

Steve Edie

Member	Species	Common	Pts	Total
<b><u>Dec 2003</u></b>				
Mike Hellweg	<i>Apistogramma borellii</i> 'Paraguay'	Umbrella Apisto	10	1491
Mike Hellweg	<i>Boraras urophthalmoides</i> *	Exclamation Point Dwarf Rasbora	20	1516
Mike Hellweg	<i>Xiphophorus montezumae</i>		5	1521
<b><u>Jan 2003</u></b>				
Mike Hellweg	<i>Syngnathus scovelli</i> *	Gulf Pipefish	20	1546
<b><u>Feb 2004</u></b>				
Frank Badolato	<i>Thorichthys ellioti</i>		15	15
<b><u>March 2004</u></b>				
John Van Asch	<i>Laetacara curviceps</i>	Smiling Acara	10	210
John Van Asch	<i>Brachydanio rerio</i>	Zebra Danio	5	215
John Van Asch	<i>Copadichromis mloto</i>	Yellow Princess	10	225

\* First MASI spawn (5 point bonus)

## Membership Renewal

Kathy Deutsch

Membership Dues are Due!  
Your continuing membership supports our club!  
\$20 per calendar year includes 6 issues of The Darter.  
Questions? Complaints? Comments? See me at the meeting or at our show.  
Call: 314-741-0474  
Email: [fishfan@il.net](mailto:fishfan@il.net)  
Thanks! Kathy Deutsch

# HAP Report

Mike Hellweg

My mention of the banned species list in the last issue has already generated much conversation. There was some grumbling and complaining about certain species which can't survive a winter here in Missouri, but most folks thought it was a good idea to bring everyone up to date. For those of you who complained: Remember, I'm only the messenger! Other hobbyists, businesses, and even government entities who screwed up over the years are the ones to complain to - not me! They are the ones who created the problem by not considering the possible ramifications of their actions. We can no longer afford to do that. It was even suggested by at least three people that we "look the other way" and continue to allow those plants to be sold. My answer is that behavior like that by some hobbyists is what gives us all a bad reputation in some people's eyes in the first place!

In case you missed it, the federal regulations ban Interstate distribution of the plants by any means; that includes sale, trade, or anything else you can dream up to move them around. The federal law does not ban possession. They left that up to the individual States. In Missouri, only Purple Loosestrife, *Lythrum salicaria*, is banned outright. Remember, the penalty for violating the law falls on the distributor (that means **YOU**), *NOT* the buyer! As I suggested before, there are so many beautiful plants out there that are not a threat to the environment, why even tempt fate with the few that are a threat? Avoid any possible accidental distribution; just get rid of them by drying and burning!

Finally, there is another species on the Federal list: *Alternanthera sessilis*, known in the hobby as Scarlet Hygro.

Now, on a happier note, congratulations are in order to Charlie Hoppe, who reached the level of General Aquatic Horticulturist in February. Congratulations Charlie!

...keep 'em green

Reproduction Key:

V = Vegetative, OB = Outdoor Bloom, IB = Indoor Bloom, S = Seedling

## February 2004

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

<b>Derek Walker</b>				<b>1380</b>
<i>Egeria najas</i>	Curly Leaf Anacharis	V	5	
<i>Marsilea exarata</i>	Dwarf Water Clover	V	15	MASI First!
<i>Myriophyllum aquaticum</i>	Parrot's Feather	V	10	
<i>Sagittaria montevidensis</i>	Giant Southern Arrowhead	V	5	MASI First!
<b>Charlie Hoppe</b>				<b>50</b>
<i>Zosterella dubia</i>	Willow Grass	V	10	

# **Club Hopping**

Steve Edie

Apr 18 -- Chicago: GCCA Swap Meet

Apr 23-25 -- St Louis: Missouri Aquarium Society Inc - Annual Show

May 1-2 -- Monroeville, PA: Greater Pittsburgh Aquarium Society -- Show

May 2 -- Kansas City: HAAS Fish-O-Ramma

May 2 -- Milwaukee: Milwaukee Aquarium Society -- Fish-O-Ramma -- Swap Meet

May 22-23 -- St Louis: Gateway Guppy Association -- Show

May 28-31 -- Breckenridge, CO: American Killiefish Association -- Show

May 28-30 -- Chicago: Greater Chicago Cichlid Association -- Cichlid Classic

June 17-20 -- Columbia, SC: North American Native Fishes Association -- Annual Convention

June 26-27 -- St Louis: St Louis Water Gardening Society -- Pond-O-Rama

July 22-25 -- Denver: American Cichlid Association 2004 Annual Convention - hosted by Rocky Mountain Cichlid Association

Sept 10-12 -- Portland: Greater Portland Aquarium Society -- Annual Show

Sept 19 -- Chicago: GCCA All-Species Auction

Oct 17 -- Milwaukee: Milwaukee Aquarium Society -- Auction

Oct 24 -- Chicago: GCCA Swap Meet

Nov 6 -- Cincinnati: Greater Cincinnati Aquarium Society -- Fall Auction

Nov 12-14 -- Maryland: Aquatic Gardeners Association Annual Convention

Nov 28 -- Chicago: GCCA Swap Meet

# Collecting Chromaphyosemions in Cameroon

By Jack Heller

The diversity of life in Sub-Saharan Africa has been a source of fascination for naturalists, both professional and amateur, for more than two centuries, and the source of endless studies, publications and video productions. This has nowhere been more true than in the tropical biotopes in Central Africa where I was fortunate to spend three weeks in November and December of 1998 collecting killifish with Dr. Nevin Aspinwall and Dr. Tomas Hrbek, both of whom have made excellent contributions to our understanding of this fascinating group of fishes. It is hardly surprising that the killifish of Cameroon and Gabon have been so much in demand in the aquarium hobby worldwide, given the color, form and deportment of these small fishes and their incredible beauty and diversity. The book that has given me the greatest insight into natural history is Diversity of Life by Professor E.O. Wilson of Harvard University. The experiences that have put the book's lessons into perspective for me are the raising and observing of captive aquarium fishes and the opportunities I have had to collect fish in the wild, both in Africa and in the U.S. The diversity of life is beautifully illustrated by the study of the Chromaphyosemion complex, which, while maintaining basic similarities in overall structure from species to species, demonstrates a tremendous diversity in color and markings, even though the different species live in relatively close proximity to each other in central Africa.

On December 1, 1998, having returned on the previous day to our home base in Buea from the first of our three long collecting trips in the South West Province of Cameroon, Tomas and I went out on a one-day collecting trip to areas around Buea. Buea is a beautiful town at the foot of Mt. Cameroon. The fact that Mt. Cameroon, one of the tallest mountains on the African Continent, is an active volcano, is of considerable significance, since volcanic activity effects not only the types of water sources in an area but also the substrate of the streams and ponds in which we planned to collect. Ten kilometers south of Kumba, we stopped at a small tributary of a large stream which was shallow with a light colored, sandy bottom and some leaf litter, and clean, clear water. Here, in the slow moving areas of the stream, under leaf litter, we found our first Chromaphyosemion, which we later determined to be A. splendopleure. This fish had the classic red margin on the back of the dorsal and the bottom of the anal fin, and a few of the larger males had yellow tips on the dorsal, anal and caudal fins. In addition, the fish had some interesting markings running horizontally along the upper and lower parts of the body. These were vertical rectangular red markings in two almost perfect rows. Between the rows of red markings, the color was a light blue. This is quite a beautiful fish, and has made the transition to the aquarium easily, and I am still actively maintaining this strain.

We were able to find A. splendopleure in one more location that day in a small stream flowing through a coco-yam field about one kilometer south of the Muyuka police checkpoint on the Kumba/Buea road. In the same stream, we found A. calliurum, E. infrafasciatus and some cichlids.

On December 4<sup>th</sup>, near Edea, we found a quiet stream with slow flowing water and a number of quiet pools. This small stream also had a light colored sandy bottom and was partly covered by leaf litter. Here we found A. loennbergii, our second Chromaphyosemion. This was an attractive species with an overall light green color and some bright yellow to copper scales along the back, with a greenish blue color in the caudal and red rays running through the caudal. This fish also had the horizontal rows of rectangular red markings running along the sides of the body toward the top and bottom. The larger males also had the yellow tip on the caudal extensions. We also found this fish at one more location that

day, a few kilometers from Edea This was a faster flowing stream with a few quiet pools, and again had light colored sandy bottom. Along with A. loenbergii we found A. franzwernerii, E. infra fasciatus, a Procatopus species and some cichlids.

On December 6<sup>th</sup>, Tomas and I again went out on a one day collecting trip, as Nevin had some other obligations in Buea. On the road from Buea to Kumba, about five kilometers south of the Muyuka police checkpoint, we found a stream adjoining a marshy area. This stream had submerged grasses and overhanging vegetation, and was a beautiful collecting site. Tomas noted that the site was not shaded from the sun, and was an atypical killifish habitat. The bottom was dark colored and sandy with clear water. We decided to try our luck, and the stream proved very productive. At this stream we collected A. poliaki along with Mastacembellus species and some cichlids. Although this fish lacked the colors found in A. splendopleure and A. loenbergii, being primarily a black and copper colored fish, the copper colored scales along the back were radiant. The fish made the trip back to the states very well, and has proven to be our most successful Chromaphyosemions in adapting to aquarium life. I long ago gave up collecting eggs from this species as the fry appear in the tank in large numbers, and the adults seem to leave them alone. In anticipation of a recent trip to Wisconsin for the annual WAKO show, I pulled plants and mops out of my A. poliaki tank in order to take the last of these fish up to WAKO. Instead of the three or four young pair I anticipated, I pulled out over thirty young fish! We found A. poliaki at two more sites that day, and found A. splendopleure at our second to last site, on the road from Buea to Limbe. We ended up with more A. poliaki than we could accommodate in our limited tank space, but they were so abundant in the habitats that it was easy to over-collect without realizing it.

On December 7<sup>th</sup>, we left with Nevin for another long trip, this time heading south. Just west of the town of Somakak we found a quiet stream with a light sandy bottom, and here we found A. riggenbachi. This was a very impressive fish, with a blue background and beautiful red markings on the body and fins. The size of some males was quite large, and the caudal fins had nice white extensions. With the A. riggenbachi, we found A. ahli, E. infra fasciatus, a Procatopus species, and some barbs. We also found some attractive Anubias growing in the stream. Further west on the same road, we stopped at another slow moving stream similar to the one we had just left. We found the same A. ahli, E. infra fasciatus and Barbs, but instead of A. riggenbachi, the Chromaphyosemion. in this stream was A. loenbergii. In the next two streams that we stopped at off this highway, we found more A. loenbergii, and in the second of these streams, we found A. loenbergii sharing the stream with an A. cameronense and E. esekanus, the first of either of these species that we had seen. This stream was heavily shaded, which may have accounted for the additional species.

On December 8, we took the road from the town of Campo and headed inland. Just past the village of Afan Essokie, we stopped at a medium size stream that was heavily shaded and had a few quiet areas. Again, the bottom was light colored and sandy. Here we caught our first A. lugens. In all my years in the killifish hobby, I had never seen this fish. It had not, in fact, been in the American hobby for many years, and I had received a request from my friend Darrell Ullisch, a knowledgeable Chromaphyosemion collector, to keep an eye out for this fish if we got anywhere close to the habitat. We did not expect to have the opportunity to collect this fish again, since the known distribution of this fish is quite limited, so we tried to collect a good number of healthy pairs. This fish is not particularly beautiful, being pale green in the lower part of the body grading to a darker color toward the back, with dark red markings over the upper half of the body and onto the dorsal and caudal fin. Older males can be quite imposing with their large size and dark colors. This is another of the fishes that successfully made the transition to an aquarium environment, and has become well established in the American hobby. In the same stream where we found A. lugens, we also found A. ahli.

Further down the road from Compo heading inland, close to a village called Bibabivotou, we stopped at another shaded stream, this time a relatively large one, with a quiet area full of leaves, trees and mud, but with very little other vegetation, we found another species of Chromaphyosemion that had, as of that time, not yet been named. We identified it only as “A. sp. 4”. Along with this fish, we also found A. ahli, E. infra fasciatus and a Clarias species.

On December 9<sup>th</sup>, we found ourselves on the road from Kribi to Campo. About ten kilometers north of Campo, we found a small stream that was largely shaded and fairly free of debris. Here we again found A. splendopleure, and also found A. ahli. At a second, similar stream on the road from Kribi to Ebolowa, we again found A. splendopleure.

Since we were heading inland, in search of A. camerunense, we did not collect another Chromaphyosemion on the final leg of our trip.

I flew out of Cameroon the evening of December 14<sup>th</sup> after an exhausting day of bagging, labeling and packing fish. We divided the collections evenly, so that if I had some losses on the trip home, I could notify Nevin and Tomas and they could re-collect some of the locations. This turned out to be a good strategy, because although my casualties were limited, Nevin lost all of his collection due to problems in transit. Tomas was able to bring some fish on board with him, and therefore brought several additional Chromaphyosemions home alive. The majority of my mortalities were among the larger Fundulopanchax and Epiplatys. The majority of the Chromaphyosemions arrived in fine shape, and we have successfully spawned all of the Chrom species that we collected.

I have learned a great deal about this group since my Cameroon trip, and have a new appreciation for the beauty and diversity of this remarkable sub-genus of Aphyosemions.

## Seed Saving

Maureen Green

I have been saving seed from land plants for years, and when I got into water gardening, I thought that the rules would have to be changed, but not so: for the plants that bloom above water, if they are hardy, the seed will need refrigeration over the winter. You need to wait until they mature, harvest them, be sure they are dry, insert them in a labeled envelope, make up a silica gel packet (I use a coffee filter, because it breathes), you can also use the small packets that come in purses, or the small can that comes in with the bottle of aspirin. (the packets keep moisture from destroying the seeds), then put them in the bottom of a plastic bag.

For the seeds of the flowers that lay in the water (like hardy water lilies) you will have to store in water and refrigerate.

For tropical seed they should remain dry. When they have reached maturity, harvest, make sure they are dry, insert them into a labeled envelope and seal. I also use a silica gel packet for these, only I use a jar for storage, and they are put into a dark, cool room for storage. When spring comes, I start them in a soilless mix. It prevents them from damping off disease. All young plants are susceptible to it.



# MASI Library Book List

MASI has a fairly extensive library for members to use. Lately it has not been very active. Some of the older books are hard to find, and some of the newer books are expensive, so this is a chance for members to gain access to more information than they might otherwise have. The book list is being published in The Darter so members can see if there is a publication they are interested in. since the entire library is not brought to each meeting, it may have items that a member is otherwise not aware of. All items except category Reference are available for members to check out, so if you see something you are interested in looking at, contact our librarian, Dave Rush, to make sure it will be available at the next meeting for you.

Category = Freshwater, Marine, Reference, Video  
 Reference Books are not for Lending  
 Condition - see Condition Definitions on next page

Cat.	Main Subject Title	Author	Publisher
Ref	Catfish	Catfishes of the World Vol. 1- Callichthyidae	Sands Dunure
Ref	Catfish	Catfishes of the World Vol. 2 - Mochokidae	Sands Dunure
Ref	Catfish	Catfishes of the World Vol. 3 - Auchenipteridae & Pimelodidae	Sands Dunure
Ref	Catfish	Catfishes of the World Vol. 4 - Aspredinidae, Doradidae, & Loricariidae	Sands Dunure
Ref	Catfish	Catfishes of the World Vol. 5 - Bagridae & Others	Sands Dunure
Ref	Cichlids	Cichlids & all other Fishes of Lake Malawi	Konings TFH
Ref	Cichlids	Cichlids & all other Fishes of Lake Tanganyika	Brichard TFH
Ref	Cichlids	The Most Complete Lexicon of Cichlids	Axelrod et al TFH
Ref	Catfish	Dr. Burgess' Atlas of Freshwater & Marine Catfishes	Burgess et al TFH
Ref	Atlas	Dr. Axelrod's Atlas of Freshwater Fish	Axelrod et al TFH
Ref	Atlas	Exotic Tropical Fishes Expanded Edition - in 2 Binders	Axelrod et al TFH
Ref	Native Fish	An Introduction to Missouri Fishes	Pflieger MO Cons. Dept
Ref	Livebearers	Atlas of Livebearers	Wischnath TFH
Ref	Atlas	FAAS Species Size Guide	Fazio FAAS
Ref	Native Fish	The Fishes of Missouri	Pflieger MO Cons. Dept
FW	Livebearers	Atlas of Livebearers	Wischnath TFH
FW	Plants	Aquarium Plants the Practical Guide	Tepoot New Life
FW	Plants	Aquarium Plants	Kasselmann Krieger
FW	Plants	Encyclopedia of Water Plants	Stodola TFH
FW	Ponds	Goldfish Pools, Water Lilies & Tropical Fishes	Thomas Sterling
FW	Live Foods	Plankton Culture Manual	Hoff & Snell Florida Aqua Farms
FW	Rainbowfish	The Best of the RSG	Various RSG
FW	Koi	A Fishkeeper's Guide to Koi	James Tetra
FW	Livebearers	Lebendgebarende Zierfishche	der Welt Mergus
FW	Cichlids	Cichlid Atlas 1	Romer Mergus
FW	Goldfish	Coldwater Fish	Ladiges Tetra
FW	Goldfish	The ABC's of Goldfish	Teitier TFH
FW	Goldfish	Hong Kong Goldfish	Man Urban Council
FW	Plants	Water Plants in the Aquarium	Scheurmann Barron's
FW	Livebearers	Mollies in Color	Axelrod Sterling
FW	Rasboras	Rasboras	Brittan Sterling
FW	Barbs	African Barbs	Axelrod Sterling
FW	Guppies	How to Raise Show Guppies	Wasserman TFH
FW	Cichlids	The Cichlids Yearbook Volume 1	Konings Old World
FW	Cichlids	African Cichlids of Lakes Malawi & Tanganyika	Axelrod TFH

<b>Cat.</b>	<b>Main Subject Title</b>	<b>Author</b>	<b>Publisher</b>	
FW	Cichlids	Angelfish	Walker	TFH
FW	Cichlids	Discus	Voderwinkler	Sterling
FW	Cichlids	Introduction to the Cichlids	Goldstein	TFH
FW	Cichlids	Dwarf Cichlids	Vierke	TFH
FW	Cichlids	Mbuna	Johnson	Pisces
FW	Cichlids	African Cichlids of Lakes Malawi & Tanganyika	Axelrod	TFH
FW	Killies	Rivulins of the Old World	Scheel	TFH
FW	Livebearers	Killifishche aus Aller Welt	Radda	Hoffman
FW	Killies	Killifish - Their Care and Breeding	Terceira	Kordon
FW	Cichlids	The Cichlid Aquarium	Loiselle	Tetra
FW	Cichlids	The Cichlid Fishes fo the Great Lakes of Africa	Fryer	TFH
FW	Catfish	Catfish	Emmens	TFH
FW	Catfish	A Complete Introduction to Corydoras	Burgess	TFH
FW	Anabantids	Bettas, Gouramis, and other Anabantoids	Vierke	TFH
FW	Anabantids	Labyrinth Fish - the Bubble-Nest-Breeders	Linke	Tetra
FW	Tetras	Characoids of the World	Gery	TFH
FW	Killies	Pearl Killifishes	Costa	TFH
FW	Anabantids	Gouramis and other Anabantoids	Richter	TFH
FW	Catfish	An Atlas of Freshwater & Marine Catfishes	Burgess	TFH
FW	Breeding	The Fascination of Breeding Aquarium Fish	Axelrod & Sweeney	TFH
FW	Breeding	How to Keep & Breed Tropical Fish	Emmens	TFH
FW	Breeding	Breeding Aquarium Fishes - A complete introduction	Axelrod	TFH
FW	Breeding	Know How to Breed Egglayers	LaCorte	Pet Library
FW	Diseases	Parasitology of Fishes	Dogiel et al	TFH
FW	Diseases	Prevention & Care Tropical Fish Diseases	Cohen	Pet Library
FW	General	A Fishkeeper's Guide to Maintaining a Healthy Aquarium	Carrington	Tetra
FW	Diseases	Cure and Recognize Aquarium Fish Diseases	Schubert	TFH
FW	General	Guppies to Groupers Handbook	Speice	Penn Communications
FW	General	Tropical Fish	Gohm	Hamlyn
FW	General	School of Fish	Keppler	PetsPubs Press
FW	General	Fish & Their Behavior	Zupane	Tetra
FW	Atlas	Sterba's Freshwater Fishes of the World Vol. 1	Sterba	TFH
FW	Atlas	Sterba's Freshwater Fishes of the World Vol. 2	Sterba	TFH
Fw	General	Aquarium Guide	Kelly	Pet Library
FW	General	Advanced Aquarist Guide	Ghadially	Pet Library
FW	General	Encyclopedia of Tropical Fish	Axelrod et al	TFH
FW	General	Illustrated Dictionary of Tropical Fishes	Frey	TFH
FW	General	Exotic Aquarium Fishes	Innes	TFH
FW	Atlas	Aquarium Atlas #1	Baensch	Mergus
FW	Atlas	Aquarium Atlas #2	Baensch	Mergus
FW	History	A History of the Aquarium Hobby	Klee	ACA
FW	General	Water Chemistry for Advanced Aquarists	Huckstedt	TFH
FW	General	The Water Book	Barnstead	Barnstead
FW	Live Foods	Wingless Fruit Flies	Flagg	Carolina Biological Supply
FW	Koi	Koi of the World	Axelrod	TFH
FW	Atlas	Encyclopedia of Fish	Burton	Finsbury Books
M	Atlas	A Fishkeepers Guide to Marine Fishes	Mills	Tetra
M	Atlas	Caribbean Reef Fishes	Randall	TFH
M	Seahorses	Encyclopedia of Sea Horses	Bellomy	TFH
M	Seahorses	Seahorses in your Home	Bellomy	TFH
M	Breeding	Artificial Propagation of Marine Fish	Shelbourne	TFH
M	Seahorses	Seahorses	Unknown	TFH
M	General Marine	Saltwater Aquariums: Principle and Practice	King	Aquarium Systems

<b>Cat.</b>	<b>Main Subject Title</b>	<b>Author</b>	<b>Publisher</b>	
M	Seahorses	Keeping Sea Horses	Straughan	All-Pets Books
M	Atlas	Snorkeling Guide to Marine Life Florida, Caribbean, Bahamas	Humann & DeLoach	New World Publications
M	Atlas	Pacific Marine Fishes Book 1	Burgess et al	TFH
M	Atlas	Pacific Marine Fishes Book 2	Burgess et al	TFH
M	Atlas	Pacific Marine Fishes Book 3	Burgess et al	TFH
M	Atlas	Pacific Marine Fishes Book 4	Burgess et al	TFH
M	Atlas	Pacific Marine Fishes Book 5	Burgess et al	TFH
M	Atlas	Pacific Marine Fishes Book 6	Burgess et al	TFH
M	Atlas	Pacific Marine Fishes Book 7 - Fishes of the Great Barrier Reef	Burgess et al	TFH
M	Atlas	The Book of the Marine Aquarium	Dakin	Tetra
FW	Plexiglass	Working with Plexiglass - 4 Pamphlet set	Unknown	Rohm & Haas
FW	Cichlids	A Tale of Two Tilapias	Unknown	Discover
VIDEO	Cichlids	Tetra's Video for a Successful Cichlid Aquarium	Loiselle	Tetra
VIDEO	Plants	The Optimum Aquarium	Horst & Kipper	Dupla
VIDEO	Cichlids	Cichlidae Live	Konings	Tetra
VIDEO	General	Tetra's Video for a Successful Aquarium	Unknown	Tetra
VIDEO	General	Tetra's Video for a Successful Aquarium	Unknown	Tetra
VIDEO	General	Fish Health Management Vol. I - Fish Basics	Watson	FTFFA
VIDEO	General	Fish Health Management Vol. II - Water Quality	Watson	FTFFA
VIDEO	General	Fish Health Management Vol. III - Nutrition	Watson	FTFFA
VIDEO	General	Fish Health Management Vol. IV - Parasites	Watson	FTFFA
VIDEO	General	Fish Health Management Vol. V - Bacteria	Watson	FTFFA
VIDEO	General	Fish Health Management Vol. VI - Treatments	Watson	FTFFA
VIDEO	Seahorses	The Kingdom of the Seahorse	Vincent	Nova
VIDEO	Travel	An Eight Day Amazon Adventure	Olsen	Olsen
VIDEO	General	Aquatic Maestro Vol. 1 - Equipment & Setup	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 2 - Setup & H2OQ	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 3 - Feeding, Food, Nutrition	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 4 - The Fish/Livebearers	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 5 - Saltwater Aquaria	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 6 - Barbs & Tetras	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 7 - Diseases	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 9 - Live Plants	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 10 - Catfish & the Bottom Gang	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 11 - Cichlids	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 12 - The Aging Aquarium	Speice	Aquatic Maestro
VIDEO	General	Aquatic Maestro Vol. 13 - Trickle Filter	Speice	Aquatic Maestro

# Algae

Maureen Green

Algae to a freshwater aquarium keeper brings a yuck, turn off the lights, usually a quick trip to the store for chemicals to kill it. To a fish breeder, a tank of green water can be desirable for the fry to thrive and grow to their full potential, but to a saltwater aquarium, it means a beautiful underwater world.

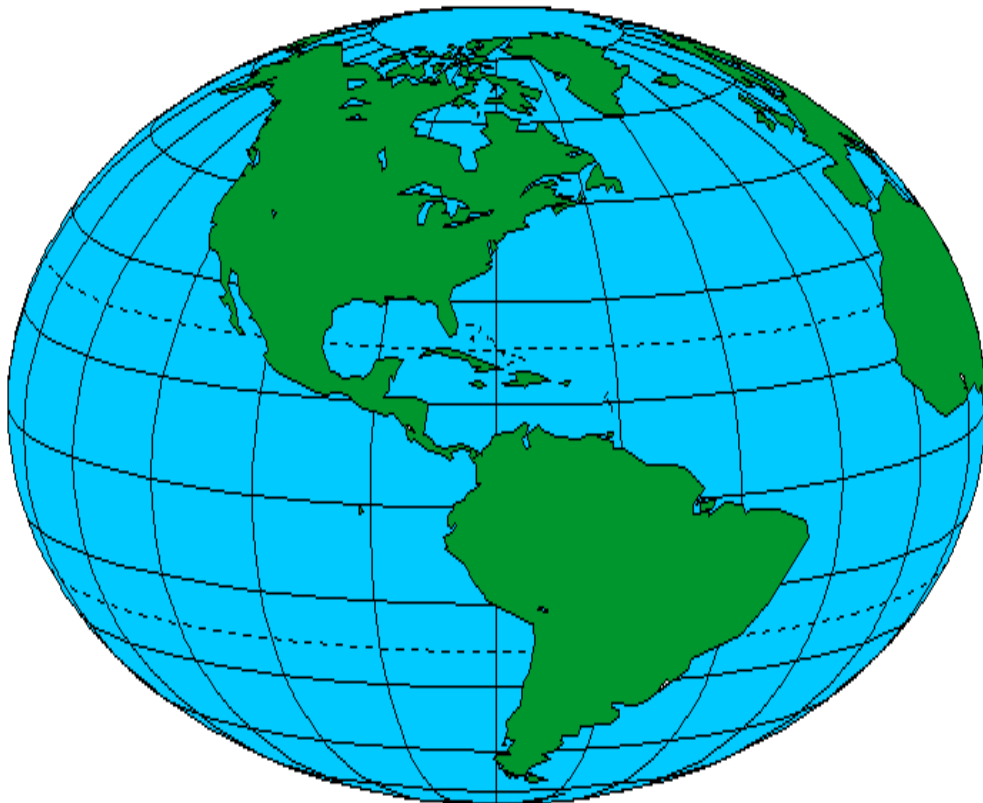
Like freshwater algae, it spreads with spores and frequently comes in with the water of new marine fish, and with the proper salinity level, lightening, ph and dh they can become established and develop into beautiful plant like life. They don't have real roots, but do spread vegetatively. The only ones that I have had were the green ones, but marine algae also in red and brown with shapes and colors that rival the colorful marine fish.





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