

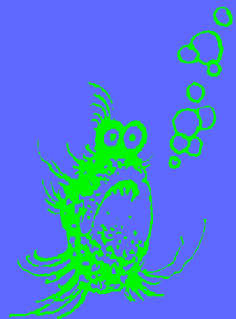
AQUATICA

THE JOURNAL OF THE BROOKLYN AQUARIUM SOCIETY
VOL. XXII MAY ~JUNE 2008 No. 5



Mandarinfish *Synchiropus splendidus*

Illustration: Julia Noonan



AQUATICA

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AQUATICA STAFF

Editor:	John Todaro	Advertising:	Izzy Zwerin & Dan Smith
Copy Editor:	Kay Martin	Subscriptions:	Lita Goldberg
Marine Editor:	Open	Exchange Editor:	Vinny Babino
Plant Editor:	Izzy Zwerin	Contributing Writers:	Vinny Babino, Frank Greco,
Illustrations:	J. Todaro, C. Giam,		Robert M. Metelsky, Madhu Soodhanan, John Todaro, Izzy Zwerin

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Aquatica will exchange publications with all interested societies. If we do not receive your publications for three consecutive months, we will assume you no longer wish to exchange and your club will be removed from our mailing list.

ALL CORRESPONDENCE CONCERNING THIS PUBLICATION SHOULD BE SENT TO:

• Editor: John Todaro , 247 Middletown Road, S. Londonderry VT, 05155	Home: 802-824-3743	Fax: Same
Please submit all articles to the Editor by mail, fax, or E-mail: JTODDYBAS@AOL.COM		
• Advertising Manager: Izzy Zwerin , P.O. Box 290610, Bklyn, NY 11229-0111	Cell Phone: 626 269-5926	
• Exchange Editor: Vinny Babino , P.O. Box 290610, Bklyn, NY 11229-0111	E-mail: vin76bob@aol.com	
• Membership: Lita Goldberg , P.O. Box 290610, Bklyn, NY 11229-0111	Phone: 718 375-0948	

OFFICERS

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The **Brooklyn Aquarium Society Inc.** is a non-profit organization 501(c) (3) for people interested in the aquarium hobby and the study of aquatic life. The Society meets the 2nd Friday of each month except July and August at the Education Hall of the New York Aquarium at Coney Island, Surf Avenue at West 8th St., at 7:30 PM.

Meetings are open to visitors. Refreshments are served. Membership is \$25 per year family/\$20 individual/\$15 for students under 14. Send inquiries or membership checks payable to:

Brooklyn Aquarium Society c/o Membership Chairperson, P.O. Box 290610, Brooklyn, NY 11229-0011.

On occasion, the Brooklyn Aquarium Society uses its mailing list to send notices of interest other than society business to our members. If you do not wish to have your name used in this manner call, **the Hotline** 718 837-4455 and leave a message.

All articles in *Aquatica* are the opinion and experiences of the author or authors, and do not necessarily represent the opinions of the editors or staff of *Aquatica* or the Brooklyn Aquarium Society Inc.





BROOKLYN AQUARIUM SOCIETY CALENDAR OF EVENTS 2008-2009

MAY 9 ~ Spring Aquatic Auction • Freshwater & marine fish, aquacultured corals, plants, & dry goods auction; including a 55 gal. tank & stand • Raffles • Discount books & sales
• Door prizes.

JUN 13 ~ Tullio DelAquila ~ Advanced Lighting Technologies For Aquariums

• Marine fish & aquacultured corals, freshwater fish & dry goods auction • Discount aquarium books & sales • BAS Elections.

JULY & AUGUST SUMMER BREAK

SEPT 12 ~ Izzy Zwerin ~ Setting Up High Tech Planted Aquariums

• Freshwater & marine fish, aquacultured corals, plants auction • Discount books & sales.

OCT 10 ~ Fall Giant Auction • Freshwater fish, plants, marine fish, aquacultured corals & dry goods auction • Discount books & sales • Raffles • Door prizes.

NOV 14 ~ Rick Borstein ~ The Road To Master Breeder (Cichlids) • Freshwater & marine fish, aquacultured corals & plants auction • Discount books & sales

DEC 12 ~ BAS Holiday Party ~ Members, their families & friends • All you can eat dinner
• Fish bingo & prizes • BAS Awards presentation.

2009

Jan 9 ~ Joe Yaiullo ~ Breeding Marine Fish In Atlantis Marine World's 20,000 Gal. Tank.

Marine fish & aquacultured corals, freshwater fish & dry goods auction • Discount books & sales.

FEB 13 ~ Terry Siegal ~ Marine Reef ~ Marine fish & aquacultured corals, freshwater fish & dry goods auction • Discount books & sales.

MAR 13 ~ Bob Larsen ~ The Glorious Guppy ~ Freshwater & marine fish, aquacultured corals, plants auction • Discount books & sales.

APR 10 ~ Tony Vargas ~ Diving The Philippine Reefs ~ Marine fish & aquacultured corals, freshwater fish & dry goods auction • Discount books & sales.

All Events held the 2nd Friday of the Month at 7:30pm at the Education Hall of the
New York Aquarium ~ Surf Avenue & West 8th Street ~ Brooklyn, NY (unless stated)
We request a \$5 Donation for non-members, good towards membership the night of the event only.

FREE REFRESHMENTS AND FREE PARKING AT EVERY MEETING- UNLESS STATED



NOTICE TO ALL MEMBERS

A motion was made, seconded and passed at the March board meeting (3/7/08) that membership cards be made up and handed out the night a person joins the BAS. If you join or renew by mail you must come to the next general meeting to get your card. Publications will still be sent by mail.

Web memberships do not get a card, and only get publications that may be on-line. The cost of mailing has gone up and this is a cost-saving measure.

THE PROBLEM WITH SPRING



In spring, your fish will face many stresses: the weather, predators, parasites and disease, to name a few. I'm sure (when temperatures dictate) your fish will once again start swimming at the surface, nibbling algae off the sides of the pond. Most likely, some of you will dig out some of last year's leftover fish food. One of the biggest spring problems is the fluctuating temperatures, the uncertainty of tomorrow's weather. Although we are never sure what the following day (or the next hour) will bring, spring can throw seemingly-summer days followed by blizzards. It is not the time to start feeding the fish. Once your area is reliably frost-free, you can consider starting to feed, preferably with a wheat germ-based food. Your fish do not have the brain process that tells them (at least not accurately!) when they are hungry. They are foragers, always eating small amounts, in their natural environment. Think of them as a herd of cattle, grazing all day and into the night. Their stomach is an elongated intestine which will continue to process today's food for the next 3-4 days before it is empty. Of course, that is at 60-70°F temperatures, not 45-50°F. At lower temperatures, the whole process will slow down and eventually cease altogether. This is the reason not to feed on a nice sunny day in March or April, if there is any chance of the temperatures dropping

again. Your fish do not benefit from a "full stomach" as you do, but will benefit more from being able to extract nutrients from that food you fed them over the next few days.

The next problem is last year's fish food. By this time it has lost a lot of its nutritional value, as amino acids break down in a relatively short period of time. This is especially true if the food was not vacuum-sealed when it was new. Freezing foods can disrupt molecules and reduce nutrition, so freezing is not recommended either. Fat content in old food can become rancid too, which may not even be noticeable to you, but your fish can become sick from eating it. The best rule of thumb is to purchase new food every season to be sure you aren't neglecting, or even harming your fish.

MOSQUITOES ARE COMING

As much as we look forward to spring, when the crocuses poke through and

are replaced by daffodils and tulips, we do not look forward to our warm weather "friends" - mosquitoes. Many people still insist they will never contract West Nile Virus or their dogs and cats won't become heartworm victims. But they do. Here in south west Florida, mosquitoes never really go away. On any warm day, just like magic, they are back. The most effective natural control for mosquitoes is Bti bacteria, or *Bacillus thuringiensis israelensis*. They do not attack mosquito larvae. The Bti mind their own business but produce sweet sugar-like crystals that mosquito larvae just love to eat. It is these crystals that kill mosquito larvae. Our Biological Mosquito Control (BMC) is quicker and cleaner than any other brand on the market. It can be used in a sprayer for large open field areas. It is completely safe (hasn't harmed my dogs who drink out of the pond) for other wildlife, fish and plants. In fact, it's only the mosquitoes and some small black flies that are even interested in those crystals, or small enough to ingest them to be affected. Mosquitoes are more likely to breed in your clogged gutter and plant saucers than your pond, but with some care, all our families can be safer this year from diseases carried by these vectors. MICROBE-LIFT/BMC, safe and effective!





The Practical Plant

ON THE MAINTENANCE OF A PLANTED AQUARIA

Hi everyone. By now those of you who have been following this column and have decided to set up a planted aquarium are probably due for some pointers on the long term care of these systems. This article will be dedicated to both the long and short term maintenance required. Even if you have been keeping fish-only systems for many years it is not exactly the same as keeping planted aquaria, so read on. This is important because the neglect of these practices will lead you down the road to disaster. Alright maybe not disaster, but at the least it will cause you some headaches.

First, let's talk about what you are putting in your filter. I am going to assume that you have a canister filter. If you do not have this type of filter, I strongly recommend that you consider upgrading. For most applications, these are the filters of choice. All the canister filters I have ever seen (except for the really old ones) contain a series of baskets designed for the use of different media of your choice. Typically, the manufacturers of these filters recommend loading one basket with mechanical media, another with chemical media and another with biological media. This is probably good advice in fish-only systems, but really poor advice in the planted aquaria. Let's tackle these one at a time.

Mechanical media in modern day canister filters, in addition to the series of media baskets, have additional sponge/foam type inserts. These should provide you with all the mechanical media required to keep your water particle-free and crystal clear.

Chemical media this refers to the use of activated carbon and resins. Carbon is an old time solution for a variety of woes. The truth is, with the exception of a couple of limited circumstances, the stuff is virtually worthless. Wow, I just heard 400 hobbyists gasp in unison. It's okay take a minute to get composed and put away those pitchforks and torches. The explanation for this heresy is as follows.

Activated Carbon, the way activated carbon works is that it contains a large number of microscopic pores. When pollutants enter these pores, they bind to the activated carbon and become trapped. Sounds good, I know. The problem, though, is that within a couple of weeks these pores become clogged with bacteria and bio-film and you are no longer getting chemical filtration anyway, but biological instead. The problem that is specific to the planted aquaria is that activated carbon (while it is actually active) will absorb dissolved organic compounds. This is a good idea in a fish-only system, but for your plants these dissolved organic compounds provide a secondary source of available Carbon to be used for pho-

tosynthesis. Additionally, in a high tech planted aquaria you are making large weekly water changes so there will not be a high level of these compounds to be removed in the first place. Now I did say that activated carbon has limited uses. It is excellent for removing medications from the water. It will also clear up any discolorations of your water caused by driftwood that you may have added to your aquarium.

Personally, I never use activated carbon, gave it up many years ago. I do not see these as issues that your water changes will not cure anyway. Any discolorations caused by driftwood are only temporary and harmless. In time, all the tannins, which is what causes these discolorations in the first place, will have leached out anyway. Also remember that activated carbon comes in many grades and the only ones worth using at all are the better grades, which are expensive.

Now let's discuss resins: Resins are chemical compounds designed to be placed in your filter. These compounds are engineered to target very specific pollutants. The most common of these resins target Phosphates, Nitrates, Ammonia, Silicates, dissolved organic compounds and heavy metals. I find that I never need to use any of these either. •

Phosphate: to begin with, you should test your tap water to detect the existing level of this

ON THE MAINTENANCE OF A PLANTED AQUARIA

element. Unless you live in an agricultural area where fertilizer runoff from farms can cause a high level, you will probably not have an issue with this. High levels of Phosphate will cause an algae problem. Even if you do have Phosphate issues, the proper time to use this resin is before placing new water into your planted aquarium. If you place this resin in your aquarium filter, it will keep your phosphates near zero, but this is not desirable because some Phosphate is required as it is an important plant nutrient.

• **Nitrates and Ammonia:** my comments about these resins are about the same as that for the Phosphate resins. It is possible your tap water contains undesirable levels, but of course you should test and determine these levels. Again, if you have high levels you should pre-treat your water prior to adding it to your system, but low levels are not a problem as these are also consumed by your plants as nutri-

ents. • **Heavy metals:** if you have well water or metal plumbing, these can be a problem. I don't know how many wells are in New York City, but I think we can skip this one. As for metal plumbing, water standing for a long time (like overnight) in metal pipes can pick up significant amounts of heavy metals. This is easily remedied by letting your water run for a couple minutes before drawing what you need. Trace amounts of heavy metals will not be an issue as plants are very good at sequestering these.

• **Dissolved Organic Compounds:** if you still have questions about these, you should go back and re-read the section on activated carbon.

• **Silicates:** this is the only resin I would consider placing in my aquarium filter. If this element is present in your tap water, it will also cause an algae problem. Since your plants have no use for this stuff, there is no problem maintaining a zero level. Test kits do exist to determine if this is present in your tap water. A generalized comment: at the risk of being redundant, if your bio load is not too high and you do not overfeed your fish, the large volume of water being changed weekly will prevent most of these issues (the nitrates, ammonia, phosphates and dissolved organics) from becoming a problem.

This leaves us with biological media. This is the important stuff. There is a growing body of evidence that plants will do best in systems with a high degree of (aerobic) biological activity. I'm not going to go into all of this evidence today, as this is beyond the scope of this article, besides I have to save some material for future articles. I actually use three different types of biological media. In the basket which the water enters first, I use those little cylinder types. This is a good idea because it will disperse your water flow evenly and help prevent dead (anaerobic) spots within your filter. In the second basket I use a media which is basically crushed lava stone (Eheim's Ehfi-Lav) which also promotes good water flow. In the third I use a pellet type (Eheim's Substrat Pro) which is made spherical to again promote good water flow. Since bacteria colonize the surface areas, it is important that you (with the exception of the Ehfi-Lav) use media that are made out of sintered glass. Some biological materials being offered are made of ceramic. Ceramic media cannot match the surface area of sintered glass which makes them inferior products. Unfortunately, good biological media is pricy. Since this media is so important and lasts a really long time, it is well worth the investment and is a good place to spend all that money you would have wasted on carbon and unnecessary resins. There is another reason that I endorse the use of a mix of biological media types. When you read most aquarium literature only two types of bacteria are discussed which convert ammonia to nitrite and then nitrite to nitrate. This is a dramatic oversimplifica-

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tion. In actuality, there are a vast multitude of bacteria species which are involved in these functions. The ones that colonize your filter media will do so because they prefer your water parameters like the temperature, pH and hardness. Additionally these bacteria may also prefer to colonize one media over another due to pore size since this is what regulates the water flow and hence the oxygen levels that reach them. A variety of biological media will ensure that many different types of bacteria can find a happy home in your filter. I know this was a tad long-winded but it is important so I decided to deal with it here and now.

Of course, you must also keep your filter clean. Remember to use tank or de-chlorinated water only to rinse your biological media. If you have a properly sized filter for your aquarium most manufacturers recommend monthly service. In practice this is very conservative. You can probably go two months or longer if you are not over-feeding and are making your regular water changes. I have one final comment on filtration. I find that most manufacturers of canister filters overrate them in terms of the size aquarium they are intended for. I like to use one size up from what they recommend. This ensures that I have a very generous supply of biological

media and that I can safely go more than a month between servicing.

Now we can get to other aspects of maintenance. You need to prune and feed your plants regularly. If your plants do not have the nutrients they need, they will not grow, or worse -- they will die. It's that simple. You need to establish a feeding regime that provides them with all the nutrients they need. I wish I could give you a simple answer to this but by now you know this is not my style. It is also not practical since how much fertilizer you need to use will vary greatly depending upon your bio load, the species of plants you keep, the plants' level of maturity, planting density, nutrient levels present in your tap water, carbon enrichment levels and lighting intensity to name just a few. The manufacturer's directions are usually a good starting point. You can then gradually increase the amount you use every couple of weeks and observe the results. If you start to see some algae developing, you know it is time to back off on the amount of fertilizer you are using. For a more detailed explanation on the required nutrient levels and a brief discussion of the Estimated Index system of dosing, go to your back issues of *Aquatica*. I have covered this in a previous article. Regular pruning is important because it will keep overgrown plants from blocking the light of slower or lower growing species. When you do this pruning you will often create a lot of small floating bits of plants. These should not be allowed to remain and rot but should be removed. This is easily done with a net or skimmed off the surface with a disposable paper



cup. Please keep in mind that after a substantial pruning, you should scale back on your use of fertilizer as the plants will not be using as much. This is also a good time to look for old/fallen leaves which should also be removed. I do have a quick tip about pruning. There are these plastic boxes on the market called specimen containers. These boxes have a lip designed to hang on the rim of the aquarium. These are great to use during pruning to keep your scissors and tweezers handy while you work.

While we're at it, a brief mention of algae is in order. If you are doing things correctly, your planted aquaria should have virtually no algae. This does not mean zero: there really is no such thing, but very close to zero should be the norm. If you are having an algae problem, you need to re-evaluate your feeding, dosing and/or maintenance practices. Even with such minuscule amounts of algae present, you will still have a need to occasionally clean the inside glass. This will not be as pressing an issue as with fish only systems. Even if you have no algae on the glass (and you shouldn't) a bio film will develop. This bio film will effect clarity. So clean your glass every couple of water changes. Because this bio film is actually healthy for your aquarium. I do not clean the rear glass at all. In the interest of maximum clarity, you should clean the outside of the glass as well. I hope you're experienced enough to know that you cannot use stuff like Windex for this. If you are not let me be the first to tell you that this

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will kill your fish. Coralife makes a product which I use called "Glass Cleaner - Polisher." It is aquarium safe and works really well.

Now let's look at the practice of the water change itself. In fish only systems, you need to vacuum your gravel all the time. This is not as necessary or as practical in the planted aquarium. The most popular gadget for performing water changes in the hobby today is called a "Python." It is truly a blessing, especially for

If your plants
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those of us with back problems. The only criticism I have of their product is the "Gravel Tube" supplied with it. This was not designed with the planted aquaria in mind. Its design makes it easy to disturb or damage delicate plants with its wide opening. There is a competing product on the market made by a company called Lee's. These two products are essentially the same and the parts are in fact interchangeable. The Lee's product, however, appears to have given a little more thought to us wet thumbs. They offer a gravel tube which has a screen/strainer over the opening. This is a much safer product for use in the planted aquaria. If you already own the "Python," you can purchase a Lee's gravel tube with the strainer as an after market product and use it with your "Python." Lee's calls this product the "Tube w/Fish-Saver Cleaning Claw." The whole purpose of vacuuming your gravel is to prevent it from becoming anaerobic. This is an undesirable and potentially hazardous condition caused by compacting of the substrate and/or an accumulation of organic material. When this happens the substrate becomes starved of oxygen and your bacterial population changes from those that use oxygen (aerobic) to those which don't (anaerobic). In the planted aquaria, we avoid substrates which will tend to compact in the first place. Also, in the planted aquaria we avoid high bio loads as well. So the risk of an anaerobic condition is greatly reduced. Do keep in mind that over feeding is a major contribut-




ing factor leading up to this condition.

Additionally, plant roots release oxygen and help to aerate the substrate. All of these things help alleviate the problem, but do not eliminate it. So we do need to do some vacuuming (sorry about that, folks). But how does someone vacuum densely planted aquaria? Good question: glad you asked. Recently, with the growing popularity of nano systems, tiny water changers with small diameter gravel tubes have appeared on the market. These are great for getting in between and around the plants and they should be employed periodically. There is one other point we should touch upon before moving on. Your lighting fixture may have a protective sheet of glass or plastic encasing the bulb, or you may use a glass cover on your aquarium. When you do your weekly water change it is time to inspect these. If they are dirty, you should clean them. Dirt in these places will greatly reduce the amount of available light.

Now let us move on to longer term maintenance issues. We discussed in a previous article on lighting that your bulbs have a limited useful lifetime and that even if they are not burnt out they still need to be replaced regularly for proper performance. If you have standard fluorescent, Compact Fluorescent or Metal Halide bulbs they are good for about one year. T5's are good for about two years. I am not sure about other bulb types and you should check with the manufacturer. If you have multiple setups or a mix of fixtures like I do, it would be prudent to keep a maintenance record or you will not remember which bulbs need to be changed when.

ON THE MAINTENANCE OF A PLANTED AQUARIA

Our last and longest term maintenance issue takes us back to an anaerobic substrates. Over the long term, despite our best efforts, our substrates will ultimately become anaerobic. How long this may take is impossible to say, but, of course, good maintenance habits help. It may take a year or maybe five, but it will happen. Undergravel substrate heaters, also known as cable heaters, are supposed to promote the long term health of your substrate, but, since I have not used these, I cannot say conclusively. There does seem to be considerable debate on this issue in plant circles, but they are popular among the European hobbyists. You will know that you have an anaerobic substrate problem if you pull up a plant and the roots and/or surrounding substrate are blackened. Also if you see bubbles rising out of your substrate when it is disturbed, this is another good indicator. These bubbles are Hydrogen Sulfide: take my word for it, this is not good and requires attention. It is best to perform this maintenance before it becomes an anaerobic mess. There is only one remedy and/or preventative maintenance practice for this condition. You need to pull up your plants and/or take cuttings, and thoroughly clean out your substrate. In small tanks, this can be done in a single session but


on medium to larger tanks, this is best done in sections because there is a population of micro organisms that reside within your substrate which is very important to the health of your plants. These bacteria help to break down organics and convert minerals into forms your plants can use. It is desirable to disturb this bacterial population as little as possible. By performing this maintenance in sections, we will preserve as most of these populations and give them time to re-establish themselves. After a procedure like this remember to scale back or temporarily suspend the use of fertilizer. Pruned and transplanted plants will be in a state of shock and not use much fertilizer, if any at all. This may last a week or two. Again, I can't tell you exactly by how much to scale back: you are going to have to make that judgment call based on the percentage of the plants in your tank that you have traumatized. Since healthy plants will have stored up a reserve of nutrients and energy, and an excess of nutrients in the water column will cause an algae problem, you should err on the side of caution. I think that this about covers our maintenance issues, but, of course, if I think of anything else in the future, I'll let you know. 

EDITORS NOTE: Members with questions about aquatic plants or setting up a planted tank can contact **Isidore (Izzy) Zwerin**, our plant editor. You can call him at (718) 449-0031 between 7pm to 10pm, Monday to Friday.



Joe Graffagnino, BAS President Will Be A Guest On The Blue Zoo Show

**THE
BLUE ZOO**
Radio show



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CLEVELAND**

with Frank Reece
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The show will feature YOUR CALLS, YOUR EMAILS, YOUR
QUESTIONS & YOUR INPUT

WWW.sportstalkCLEVELAND.com

This is the only radio show in the country dedicated to the aquarium hobby. Basically, **Frank Reece** has four guests every Monday night at 10 pm EST, from different aspects of the fish world - importers, frag clubs, retail stores, etc.

This is a very good show, with a lot of information on areas of the hobby you don't normally have any contact with. You can also call in or Email questions to the guests.

Joe Graffagnino, our President, will be one of the guests some time in late May or June. We don't know the exact day yet, but this show is most definitely worth tuning in to even if Joe is not on. You can listen on line at www.SportsTalkNetwork.co



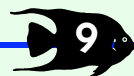
Live & Frozen Food Market Sales

At the May auction we'll have a live and frozen food sales table with a variety of live foods for sale including Bloodworms, Microworms, Vinegar Eels, Night Crawlers, and Vestigial Winged Fruit Fly start kits with directions, plus a range of frozen foods, such as Brine Shrimp, Mysis Shrimp, Black Worms, Krill, Beefheart, etc., for sale.

We will also feature our unique recipes & live food culturing cook book, "*Scrumptious Meals & Live Food Treats.*" This BAS published book is chock full of paste food recipes and over 20 live food culturing techniques.

Scrumptious Meals & Live Food Treats.

Waterproof cover, 64 pages, spiral bound -- \$12



FLOWERHORNS, ALIAS NIGHTMARES



THE FLOWERHORN

A demon fish created in Malaysia around 1996-1997 (which may possibly acquire legs and come out of the water one day!), this fish has made a storm in the hobby mostly in Asian countries, and is now spreading to the western world. The marketing and hence the demand for this fish has grown exponentially. Many breeders, distributors and LFS owners today have these creatures as their primary selling product.

THE MYTH

The myth is that the nuchal hump of the flowerhorn resembles the Chinese God of Longevity. It is believed that the black markings on the fish bring luck and prosperity to

INTRODUCTION

Enhancing the beauty of natural specimens, innovation to improve nature, developing beautiful and exotic breeds and strains - these are the words one may hear from a hybrid breeder or a hybrid loving hobbyist. But the truth is that hybridization is nothing more than HUMAN AGGRESSION TO THE NATURAL WORLD. Many of us know of a lot of hybrids, with so-called blood parrots and flowerhorns leading the list. In this article I would like to focus on the flowerhorn cichlid.

the owner in accordance with feng-shui.

Generally, Chinese believe in mythical creatures like dragons. In recent times arowanas (belonging to the group *Osteoglossidae* and otherwise called *bonytongues*) were believed to bring prosperity as they resembled the mythical dragon. Similarly, the myth of the flowerhorn is that the Chinese God of Prosperity had a hump in his neck and so does the flower horn. It is believed that as the nuchal hump grows so does the bank balance, prosperity and longevity of the owner.

ORIGIN

So far, the exact origin of the fish is unknown except by the ones who created it. But many researchers and experts believe that six cichlasoma-like cichlids were involved in assembling this fish. *Cichlasoma trimaculatum* (trimac cichlid), *Cichlasoma festae* (red terror), jingang blood parrot, *Amphilophus citrinellum* (midas cichlid), *Amphilophus labiatum* (red devil) and *Vieja synspila* (redheaded cichlid) are believed to be its parents. There are so many strains

and breeds of flowerhorns today that it is nearly impossible even for an expert to identify what species were involved to create such a hybrid. Some flowerhorns are even dyed, and/or hormone induced.

PURPOSE

EXPONENTIAL GROWTH OF PROFITS for breeders, distributors and LFS owners. A single specimen flowerhorn has reached a price of US \$319,790. From this price tag, the purpose is quite obvious. No one will be able to sell a trimac, a midas, a red terror or a redheaded cichlid for more than, say, US \$100 or \$200. Big gains in the short term are the only purpose behind the creation of this so-called exotic fish. Even today the demand for flowerhorns is high, and a colorful flowerhorn with a big hump will sell for nothing less than \$500.

CRAZE

So why are people crazy about this fish? The answer lies in one coincidental incident. A person is said to have won a million dollars in a lottery by bidding the number corresponding

to the bands in a flowerhorn. This news spread like a fire-storm all over far-east Asia and a lot of people hoped to become millionaires just by owning a fish.

Another reason for the craze for this fish is its beauty. Many flowerhorn breeders claim this to be the most beautiful fish.

It is also very easy to care for. I have seen one housed in a 20 gallon long tank with no problem. The fish grew to a size of around 10" with a big head, even in such a constrained place.

Flowerhorns are most popular among amateur hobbyists who seek only color, beauty and luck in a fish. They are the ones who really don't understand the very ethics of the hobby, or that fishes, are more than mere colorful swimming objects.

CATASTROPHE IN THE HOBBY

1. The biggest threat of flowerhorns to the fish-keeping hobby is that it has become very difficult to identify a pure species from a hybrid. Often a dull-colored flowerhorn is sold as a trimac and a red flowerhorn is sold as a redheaded cichlid. Many LFS sell flowerhorns in sizes of about 1 1/2". At this size some flowerhorns resemble convicts or orange dromides. One hobbyist in my locality mistook this fish for a convict and dropped it into his Central American tank. When this demon fish grew it terminated its tank mates and by the time he realized that it was a flowerhorn, it was too late to save its tankmates.

2. The high demand for more strains has led breeders to some cruel practices:

FLOWERHORNS, ALIAS NIGHTMARES

- Round bellied flowerhorns are much sought after, and the spines of these fish are purposely bent using some technology.

- Rich colored flowerhorns are sought after, and these fishes are dyed.

- A nuchal hump is sought after, and these fishes are constantly stressed by a mirror, very strong lighting and fluorescent gravel.

3. Aquariums are highly constrained environments. So the probability of a hybrid like this one mating with a pure species is very high. If breeding of these toy-fishes continues at such a high rate, then one day we may not see any pure species in the hobby.

4. Since it is a hybrid its characteristics are undeterminable. No one is sure of

what these creatures are capable. To my knowledge, a flowerhorn is tough enough to take over an oscar and most cichlasomines such as Texas, redheaded cichlids and severums. Also if one goes for tankmates for this fish, the tankmates and hence the hobbyist will be sitting on a ticking time-bomb.

5. Today flowerhorns have found a way to be true breeders, unlike blood parrots. People are breeding different flowerhorns together. For example, let us take FH1 as a flowerhorn developed by crossing a trimac and a red terror, and another flowerhorn FH2 is developed by crossing a trimac with a red-headed cichlid. If FH1 and FH2 breed, the resulting one will be a new kind. A demon giving birth to a demon of a new kind. Just imagine how awful the future of the hobby would be.

6. Flowerhorns attain sexual maturity at around 4" and from then on they will lay around 200 eggs every six months. If the production rate rockets up and fills aquariums, where will the pure species go? Then one day Local Fish Stores will become Local Flowerhorn Stores. In many Asian countries this has already happened.

NIGHTMARE TO NATURE

The biggest threat that these monstrous creatures possess is to the natural world. This fish is believed to be a feng-shui fish. A bigger hump and good coloration is believed to bring good luck, so obviously the vice-versa is believed. When a flowerhorn loses its hump and/or its color it is thought to bring bad luck. Thus, many owners just throw flowerhorns into nearby water bodies, and these

The biggest threat that
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'Franken-fishes' (as Dr. Ron Coleman calls them) take over the entire eco-system of that particular watershed. Most flowerhorns are brought up by being fed live fish. When a 10" fish raised on such a diet is introduced into a watershed the result is obvious.

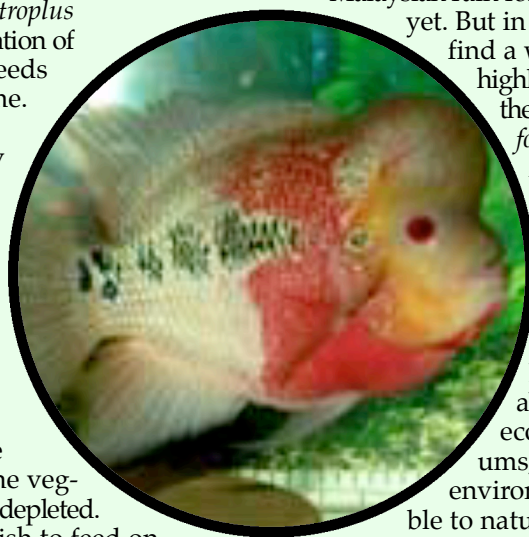
HERE IS A CASE STUDY:

There is a small pond called Ammapet pond in my locality (in the state of Tamil Nadu, India) with an area of around 4 sq. kms. Many barbs, mosquito fish, a few Asian native cichlids such as *Etiloplus maculatus* (orange chromide) and *Etiloplus suratensis*, and a rich vegetation of hydra and other water weeds used to call that lake home. Some flowerhorns were released into the pond by a few hobbyists. These flowerhorns grew to around 12" in the wild and bred there. The smaller species including orange chromides were taken as lunch. Green chromides were bullied and massacred by these aggressive creatures. There were no fish to feed on the vegetation, so the water level depleted. There were no mosquito fish to feed on mosquito eggs, so the pond became a breeding spot for mosquitoes. The entire ecological balance of the pond was ruined by just a handful of flowerhorns.

Stories similar to this have become

FLOWERHORNS, ALIAS NIGHTMARES

very common in Malaysia. Almost all watersheds in Malaysia have been infested by this fish, although no instances of this fish entering Malaysian rain forests have been reported yet. But in the future if these devils find a way into the forests, then highly endangered species like the Asian arowanas, *Scleropages formosus* already in CITES Appendix I, and other native fishes will vanish.



CONCLUSION

Aquariums should be considered to be miniature versions of natural habitats. Even though we are not able to establish perfect ecosystems in our aquariums, we can try to provide environments as close as possible to natural habitats to enjoy their beauty.

• If you buy a flowerhorn for the nuchal hump, take a look at the frontosa, *Cyphotilapia frontosa* a Tanganyikan cichlid. When left in small groups in a big enough tank the dominant male develops a hump which no flowerhorn will

produce.


• If color is what you seek in a fish, then take a look at the redheaded cichlid, *Cichlasoma synspilum*. It's got all the colors of the rainbow.

• If you desire black markings, a trimac, *Cichlasoma trimaculatum* has a distinct pattern.

• If you are looking for pearls, consider the Texas cichlid, *Cichlasoma cyanoguttatum*.

If there are natural specimens that have all the traits one expects in terms of sheer beauty then why go for the man-made stuff? There are 1500+ known species of cichlids in the wild and hundreds with striking beauty and amazing personalities available to the hobby. This availability is rich enough to fit anyone's need. Let us respect Mother Nature. Doing something awful is not difficult, but the consequences would have to be faced. As far as we know, only one planet holds the key to create, support and cycle a phenomenon called Life. Let us not cheapen it or take it for granted.

SO STOP BUYING HYBRIDS,

and if you ever come across one never hesitate to kill it. Even if your conscience doesn't allow you to kill it. NEVER THROW IT INTO ANY WATERSHED. We as a species have the power to conserve nature's creations, but do not have the right to redesign them. So say no to hybrids, hormone induced fishes and genetically redesigned species. Remember, when the buying stops, the production will too. 

The MANDARINFISH. A Stunning Fish For The Mature Reef Tank.

Family: *Callionymidae*

Species: *Synchiropus splendidus*.

Common Name: Mandarinfish.

Distribution: West Pacific from Java to Japan and the southern Barrier Reef.

Habitat: Bottom dweller. Provide lots of places for it to hide.


Size: 3 to 4 inches in the wild.

Temperature: 75° F - 79° F.

Diet: Small crustaceans and amphipods that live among the debris on the bottom of the tank. They should be kept in a mature tank where they can find enough small organisms to feed on. Best kept in larger reef aquariums. They will eat small feeder shrimp and there should be some algae in their diet.

Sexing: The male is somewhat larger and the first ray of the first dorsal is about twice as long, and anal fin extensions, brighter colors, than the female. A truly colorful fish.

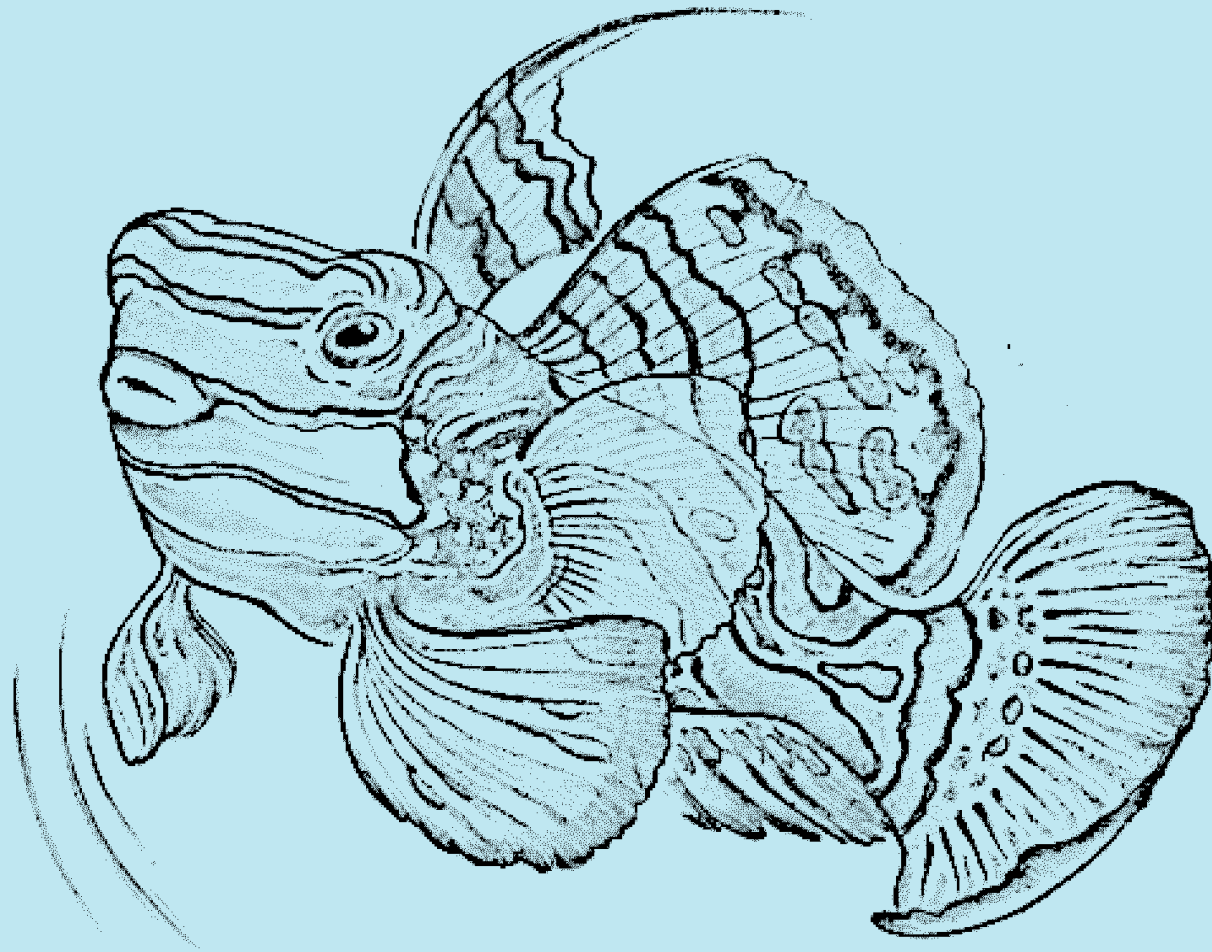
Characteristics: Mandarinfish are small bottom dwelling species and they often bury themselves in the sand during the day with only their heads peeking out. At times they may sit on a rock or low coral never far from the safety of the sandy bottom.

Remarks: Mandarinfish males should be kept singly or can be kept with females but two males will fight for territory. In general, they are very shy fish. They like a peaceful aquarium with fish that have a similar disposition. This fish should be kept in a mature tank with a lot of live rock or a tank in which algal growth is luxuriant. 

Reference:

- *The Tetra Encyclopedia of The Marine Aquarium*, Dick Mills, Salamander Books Ltd, 1987
- *Baensch Marine Atlas*, H. Debelius, H.A. Baensch, Mergus, 1994
- *Eyewitness Handbooks, Aquarium Fish*, Dick Mills, Dorling Kindersley, 1993
- *The Reef Aquarium Vol. 1*, J.C. Delbeek & J. Sprung, Ricordea Publishing, 1994
- *The Coral Reef Aquarium*, Ron Shimek, Ph.D., Howell Book House, 1999

The
MANDARINFISH.
A Stunning Fish For The Mature Reef Tank.

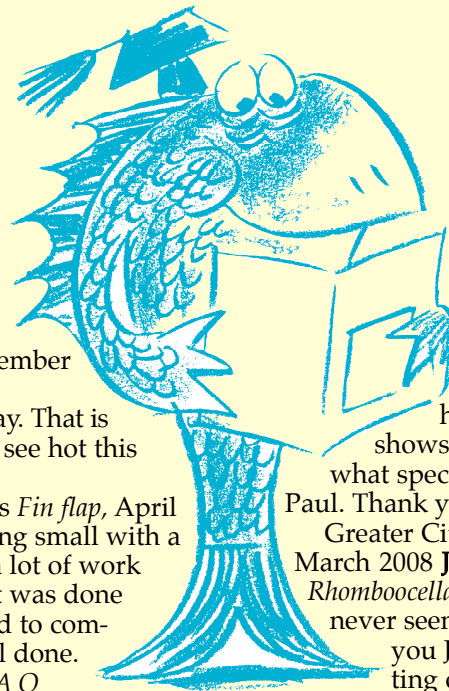


Exchange Editor's Report

I have to say I'm enjoying this job. One of the big perks is I get to read what is going on in all the other clubs. This is why I'm a member of three societies and the application to the American Killifish Association going out today. That is what makes this job so interesting. Ok so lets see hot this month.

Eastern Iowa Aquarium Association's *Fin flap*, April 2008. **Kelley Foreman** has an article on starting small with a nano tank. This is a great article. Kelley put a lot of work into this one. You will not only find out what was done but were to get the entire things you will need to complete your project. Thank you Kelly very well done.

The Honolulu Aquarium Society's *I'A O Howall*, April 2008 **Alan Teraoka** has put together a nice article called "Culturing Moina." Now that it is getting warm here in New York I was going to start a live food culture and now I know how. Thank you. P.S. this is the club I'm going to become a member on when I retire. I bet the wife will not complain about this one. I still keep telling BAS that I would like to be sent to your club as a representative. No luck but I'm working on it.



Regina Aquarium Society's, *Fins and Friends*, March 2008. **Paul Mansfield's** Article called "Differentiating Between Corydoras." In this article Paul has photos of all types of cat fish. He shows why you can sometimes be confused on what species you may have in your tank. Well done Paul. Thank you.

Greater City Aquarium society's *Modern Aquarium* March 2008 **Joseph Ferdenzi's** article on *Puntius Rhomboocellatus* tell of a very nice looking barb. I have never seen it and now I have to find some. Thank you Joe for introducing them to us and for setting on my quest for my next holy grail.

We had Mr. Ferdenzi speak at BAS last month and I have to say I did enjoy it. Thank you. So if my brother's and sister's from Hawaii need a great speaker for one of there meetings I would be more than happy to carry your bags Joe.

I get other subscriptions sent to me and one of them is the *Cichlid News*. If you are into keeping cichlid or want to get started keeping cichlids this is a great magazine. The web site is www.cichlidnews.com.



Frank Greco, Senior Aquarist, New York Aquarium
Frank's article first appeared in the summer
issue 2004 of *New York Tails*.

GONE FISHIN'

Keeping Your Fish Happy While You're Away

Preparing your fish for vacation is very different from what you need to do for other pets. While you may be able to take your dog or cat with you, you really cannot take your tank with you! Now what? Do you wish them luck, hope for the best and just take off? With a little forethought and preparation, your fish can make it though your vacation with no worry on your part. (Okay, maybe a little worry. We all worry about our stay-at-home pets while we're away.)

If you have your tank routinely serviced by an aquarium maintenance company, they will usually watch your tank for you, perhaps for an additional fee. Other companies, though, will not do this and so you'll need to make other arrangements.

If you are only going to be gone a few days, there's really no need to worry about feeding the fish. Two or three days of fasting will not harm them. For longer vacations, though, your fish will need to be fed and the tank looked after.

There are automatic fish feeders that can be purchased from your local aquarium store. These devices hang on the back of the tank, and dispense a set amount of food into the tank once or twice a day. If you go this route, you should set up the device at least one week before leaving. This way, you can make sure it is operating properly, and not dumping a lot of food into the tank at one time. Most models are battery operated, so make sure you use fresh batteries each time you use the auto feeder.

Another route to take is to have a friend or an experienced aquarist come in and fish sit for you. A friend of mine recruits older Boy Scouts to take care of his tanks while he's away. (As he puts it, "They usually know all

the basics, are trustworthy --one of the points of the scout law --and responsible.") Whomever you choose, you will want to work with them for at least two weeks before you leave. Have them walk through your routine with you several times so they are fairly comfortable with it. Remember, you just want them to maintain the tank, not do any serious changes. They should know how much to feed (overfeeding by well-meaning tank minders is not uncommon), and what to do if the filter stops or you lose power. It is a good idea to prepackage the food (one pack per day) and hide the rest of it. This way, the temptation is not there to overfeed.

Once you have decided how you are going to care for your fish, you should get your tank ready for your trip. This will involve doing a water change, using a gravel cleaning siphon, at least a week before your trip. Two to three days before you leave, you will want to clean your filter so that it's running at peak efficiency. Change all chemical filters (carbon, etc.) and filter pads. If you have not done so already, put your light on a timer. This will give your fish a regular day/night cycle. You should also leave the number of your local aquarium store or another aquarium keeper, in case your caretaker

runs into a situation above what they can handle. Also leave a number where they can reach you in case of emergency.

Now that we've gone over what to do to prepare your fish for your vacation, let's discuss things you **SHOULD NOT** do. First, do not add any new equipment to the tank. Such equipment can break down when you least expect it. Make sure your current filter, heater, etc., are working properly. Second, do not add any new animals to the tank for at least a month before you are planning to leave. New animals can be vectors for disease, and you do not want an infection to start while you are away. Third, I strongly advise against using those vacation feeder blocks. It's been my experience that they do more harm than good, potentially fouling the water and causing unhealthy environmental conditions. In case a water change is needed, you might want to leave jugs of makeup water near the tank. You should leave enough to do a 25% change, and instructions on how to make more if needed.

Lastly, the day before you leave, you and the caretaker should do a walk-through. Check all the equipment, and go over the feeding regime. By preparing ahead of time, your fish will be fine upon your return.



Something fishy going on in your tank? Just ask Frank! Log on to [news://news.annexcafe.com/annexcafe.animalforum.fish](http://news.annexcafe.com/annexcafe.animalforum.fish) or email him directly at phrankg@optonline.net. Visit his live fish chat every Sunday from 9pm to 10pm at mic://chat.annexcafe.com/#Fish

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Robert M. Metelsky, Author of the book, *Simplified Reefkeeping*, 3rd ed. available at simplifiedreefkeeping.com. Shoreline Resources, Reprinted from Aquarticles.com

What Do I Need For A Successful Reef Tank?

Is Planning an important step?

The most important thing to do is to plan ahead. The reason this chapter is so important, in my opinion, is that so many people would like to get into this hobby, but they don't plan. They walk into a pet store, see some nice live rock and coral and invertebrates, and they want to start a tank with that. After their purchase, they find their light is not strong enough; their water isn't pure enough; they don't have test kits or the right size protein skimmer. Their tank has not been properly conditioned, so the livestock they bought dies. At this point, they are shocked at what it will cost to get the proper items, and many just give up. Some others try to go on with half of the items they really need, still with bad results. *Do not take this approach!*

Summary:

Understand what is involved
Can you afford a reef tank?
Write a plan.
List actual costs of items in your area.
Get an idea of a tank size.

1. What size tank?

Its location, preferably near a sink (for water supply and drain). Will the floor carry the weight of the tank? Preferably away from direct sunlight. How much floor space will all the equipment take? Is there enough power supply to run all the equipment? Will there be enough room to service behind the tank?



2. Your budget.

Can you afford it? List and plan (very important). You may not be able to have everything up and running right away. But if you are patient and plan ahead, buying what you need as you can afford it, you will end up with the largest, most pleasing set-up you can have. Put a lot of effort into the functioning of the system first, before adding live creatures to it. Plan for the ease of water changes and waste water drainage, the location of your tap water purification system, a large protein skimmer, and high-power lights with the proper bulbs. Once you have these in place (proceeding to each item as you can afford it), you won't have to worry about jeopardizing the livestock you will buy. This is definitely the best approach.

3. Your time.

Remember: only bad things happen fast in this hobby, usually due to lack of time spent in advance. Patience is invaluable. Keeping a reef will take a considerable amount of time, especially if you fabricate the components yourself. However, the rewards are exceptional! You will get tremendous satisfaction from knowing that you built components that are practical to maintain, and far exceed factory-built standards. But all this takes time, a lot of time. Are you willing to do water changes every two to three weeks? Are you ready to change your pre-filter every week? Make limewater as needed for evaporation?

What Do I Need For A Successful Reef Tank?

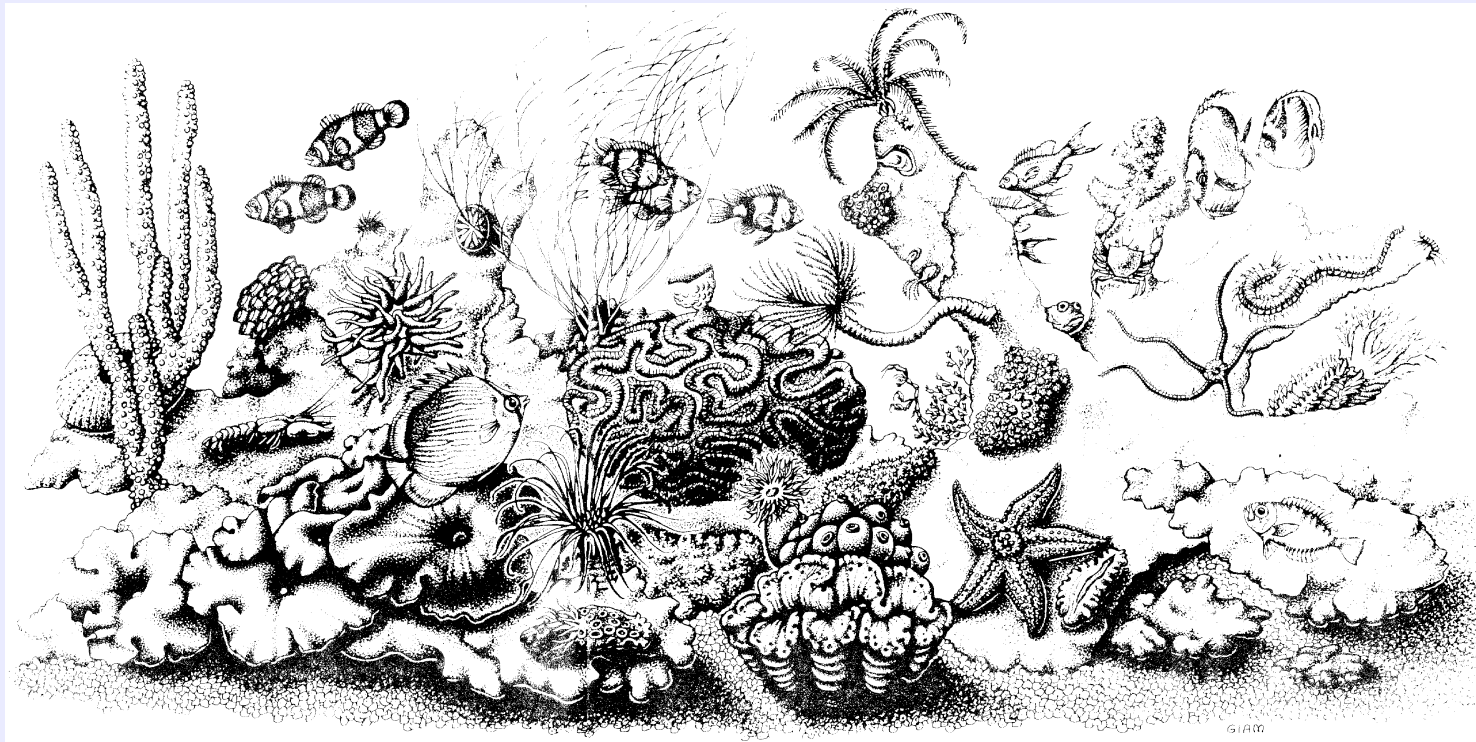
Remove algae as needed? These are all responsibilities you have to take into consideration.

There are a couple of items I left out, such as a wave maker or surge buckets, timers for the lights, electronic pH testers, a generator

in the event of a power outage, etc. I omitted these from the start-up figure because they are not absolutely essential at the very beginning. They are important, beneficial components, but they can be added to the system later on if you prefer.

What about the livestock?


I recommend that the largest population of livestock in the reef tank be shrimp, starfish, clams, urchins, snails, and harmless crabs. Next, in a lesser amount, would be the corals; they produce a minimum amount of waste, and in fact some of them will process waste. Finally, fish should be added, in the smallest numbers. They are the largest consumers of food, and therefore produce the most



waste. Having only a few fish will mean that you will be putting in less commercial food. This reduces the risk of food going uneaten and accumulating in the pre-filter, possibly becoming food for algae and/or leading to diminished water quality.

Your fish should be reef-compatible only; that is, they should eat algae but not coral.

Nearly all of the creatures we put into our tank should be able to consume their fair share of naturally-occurring algae. The selection of livestock is important for algae management. I recommend that nearly all of the livestock in your reef tank be algae consumers—fish especially. To be allowed into your reef, just about every creature should consume its fair share of

algae. This way, not only are the tank inhabitants interesting and beautiful, but they will serve an important function. They will manage the unavoidable, naturally-occurring algae that would be a major inconvenience for you (the reef keeper) to remove manually. Let the fish, snails, crabs, and urchins remove it for you, naturally. 

ALL THE ITEMS HERE ARE NEEDED FOR A SUCCESSFUL REEF TANK:

ITEM w/ APPROX. COST (Note: These are approx. retail prices, in U.S.\$\$\$, as available in the U.S. - Your cost may vary.)

1. Deionizer or reverse osmosis water purifier.....\$270
2. Resin for above, to replace every 6 months:1 gal. \$60
3. Bulbs: 48" actinic blue & actinic white,..... 4 @ \$25 - \$100
4. 30" protein skimmer (Venturi)*.....\$300
5. Pressure pump for skimmer, 500 to 600 GPH.....\$90
6. Carbon pre filters for tap water:1 @ \$60, 1 @ \$25 - \$85
7. Cartridges for above:.....2 @ \$12,
1 @ \$5 - \$29
8. Sump box (for pre-filter)*.....\$150
9. Material, 6 packages floss pre-filter.....\$50
10. Main pump 500 to 600 GPH.....\$90
11. Tank: 55 gallons*\$70
12. Tank stand*\$75
13. Light canopy to house four 48" bulbs (w/ VHO ballast)* \$300
14. Salt mix: 1 for set-up for 55 gallon tank.....\$18
15. Salt mix for water changes.....\$18
16. Phosphate test kit.....\$20
17. Test kit for ammonia, pH, nitrite, nitrate.....\$45
18. Test kit for K.H. \$12, calcium.....\$12 - \$24
19. Specific gravity meter.....\$12
20. Misc. (books, power strips, Kalkwasser, trace elements, etc.)..\$100
- TOTAL: **\$1,906**

* These items can easily be made by the hobbyists to save money. My book *Simplified Reefkeeping*, shows you how! Plus! other items not on the list.





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www.petlanddiscounts.com See the white pages, or their ad on page 44 for a store near you.

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Ph: 1 (718) 238-0918 • Hrs: 7 days a week 10:30am-8pm

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Pet Shanty Family owned & operated; stocks 3 rooms of freshwater fish & 1 of marine fish & corals. They stock a vast list of fish which is posted on line at <http://petshanty.com>. They also carry other pets and pet supplies. You've got to check them out; they probably have the fish or corals you want.

Pet Shanty

2507 U.S. Hwy 22, Scotch Plains, NJ 07076
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Requirements:

- Bachelor's degree in Marine Biology, Biology or related field and/or equivalent experience:
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- Demonstrated experience or willingness to be trained in maintaining various other animals, specifically: reptiles, insects, amphibians, and sun conure.
- Ability to work independently; attention to detail; initiative and follow through.

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5. Observe and recognize medical conditions that may require medical treatments. Promptly report those conditions to the Live Animal Curator.
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7. Keep up to date with current knowledge, expertise and latest industry advances.
8. All other duties as required.

Schedule and Salary:

1. Work full days on Sundays, Mondays and Fridays
2. Flexible to cover additional hours for paid time to cover emergency as needed.
3. Part time position with no health/dental benefits.

Please send letter of interest and resume to:

Celeste Tam
Science Coordinator
Brooklyn Children's Museum
145 Brooklyn Avenue
Brooklyn, NY 11213
ctam@brooklynkids.org

Brooklyn Children's Museum is an equal opportunity employer.



Educating
Aquarists
Since 1911

Membership Application Brooklyn Aquarium Society ^{2008/2009}

Meetings are held at the NY Aquarium Education Hall on the 2nd Friday of the month at 7:30pm. Knowledgeable speakers on fish care and culture, door prizes, raffles, and fish auctions. All meetings are free to members.
Visit us on line: **BROOKLYNAQUARIUMSOCIETY.ORG**

Mail This Form Or A Copy And Your Check Payable to
Brooklyn Aquarium Society to
BROOKLYN AQUARIUM SOCIETY,
ATT: Ms. LITA GOLDBERG,
MEMBERSHIP CHAIRPERSON,
P.O. BOX 290610, BROOKLYN, NEW YORK
11229-0011

NAME _____ OCCUPATION _____

ADDRESS _____ CITY _____ STATE _____ ZIP _____

PHONE (DAY) _____ (EVE) _____ (FAX) _____

E-mail

Address _____

TYPE & LENGTH of MEMBERSHIP: (CHECK ONE)

INDIVIDUAL

1yr.
\$20

2yr.
\$36

3yr.
\$51

4yr.
\$68

FAMILY

1yr.
\$25

2yr.
\$45

3yr.
\$63

4yr.
\$85

[] \$15 STUDENT 1YEAR
(UNDER 18 YEARS)

*

If family membership, please list all family members. Only first two listed will have voting rights.

1 _____ 2 _____ 3 _____

4 _____ 5 _____ 6 _____

Number of tanks [] marine [] freshwater [] Do you breed fish?
[yes] [no]

If yes, what types do you breed: _____

Special interest (if any) _____

How did you hear about BAS?

[friend] [dealer] [flyer] [Aquatica] [mag ad] [online] other _____

To volunteer check [yes] [no] A board member will get in touch with you if you check yes.

On occasion the Brooklyn Aquarium Society uses its mailing list to send notices of interest to our members.
If you **DO NOT** wish to receive these mailings please check here []

Official use

Member number: _____

Date paid: _____

Amount paid: _____

Type of membership [F] [I] [S]

Board approved date _____

Renewal/member since _____