1911~ 2012
101 Years of Educating Aquarists

AQUATICA

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VOL XXVI MAY ~ JUNE 2012 No. 5

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Note: The Editor takes full responsibility for misspellings and punctuation errors.

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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.

BROOKLYN AQUARIUM SOCIETY
CALENDAR OF EVENTS ~ 2012 - 2013

101 Years of Educating Aquarists

MAY 11 **Giant Spring Auction** ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods, including a 55 gal. tank & stand.
JUN 8 **Todd Gardner ~ Getting Started in Marine Aquaculture** ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

JULY/AUGUST ~ NO MEETINGS

SEPT 14 **Mike Hellwig ~ Fish Breeding Contest with Ted Judy** ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
OCT 12 **Giant Fall Auction** ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods, including a 55 gal. tank & stand.
NOV 9 **Gene Ritter ~ Reef Diving** ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
DEC 14 **Holiday Party** ~ Members, their families and friends, all you can eat sit-down dinner • Fish Bingo & Prizes • BAS Awards presentations.

2013

JAN 11 TBA
FEB 8 **Kathy Cardineau - Ponds the Easy Way** ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
MAR 8 Kevin Kohen - Salt
APR 12 **Mark Denaro - Where Rare Species are Common**
MAY 10 **Giant Spring Auction** ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods, including a 55 gal. tank & stand.
JUN 14 TBA

JULY/AUGUST ~ NO MEETINGS

SEPT 13 TBA
OCT 11 Giant Fall Auction ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods, including a 55 gal. tank & stand.
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DIAMOND TETRAS SPAWN

On September 29, 2011, I purchased thirteen young diamond tetras (*Moenkhausia pittieri*) from Petland Discounts. Four died in quarantine, and I transferred the remaining nine – four males, five females – to their permanent 120-gallon home on October 25.

This aquarium is outfitted with a considerable amount of wood plus some plastic logs and caves and a few glass rocks. The substrate is river gravel. The most critical component is a heavy layer of fine-leaf floating plants which are outcompeting both java moss and black algae for light and nutrients.

Male

Female

Almost from their introduction, the diamonds were drawn to the floating plants, readily darting and, presumably, foraging among them. This went on for several days. All nine fish thrived, and the males, especially, gained noticeably in size and fin color.

After about a week or nine days, I noticed a change in their behavior. The largest, most impressive male had taken over the most heavily planted side of the tank. He stood guard there, driving all his compeers, males and females alike, away whenever any of these approached. He ignored their other tankmates.

The guarding went on for about two weeks. I was intrigued, because I would expect such behavior from cichlids but had never observed it in any of the other tetras I had kept. There was a brief break when the whole school was allowed access, then the guarding resumed, a pattern that has continued to the present time.

In mid December, a nice-sized diamond tetra baby emerged from the plants and a second on the following day. Both fry were already "above the radar" for any of their tankmates and have now joined the school, although they are still smaller than the original fish.

Ten more fry, the result of at least two other spawnings, have presented themselves. This is a confirmed count, by which I mean I was able to identify twelve individual fish at one time on multiple occasions. It is probable that others are present as well. To my surprise, all of these are quite daring. The original pair stayed close to cover until they were quite well grown, but the younger ones move away from the plants into open water quite frequently.

Technical Details:

- The aquarium is 120 gallons and is furnished as described above. It is very well established, having been set up in November, 2001.
- There are two Fluval canister filters, a 404 and a 405, two UV sterilizers, two heaters, and two air pumps with two air stones each.
- Temperature is 80°. I keep it this high to avoid the stress of too radical a change in the summer, since I cannot adequately cool my apartment.
- The pH normally ranges from about 6.45-6.55.
- Tankmates are all quiet, peaceful fishes. They consist of a large school of rummynose tetras, four White Cloud Mountain minnows, two pristella tetras, two dwarf neon rainbowfish, five male ancistrus (three albino), one peckolita, six ottos of three different species, and a very large number of corydoras catfish of a number of species. The albino ancistrus and several of the cory species have also spawned and "raised" fry within the aquarium.

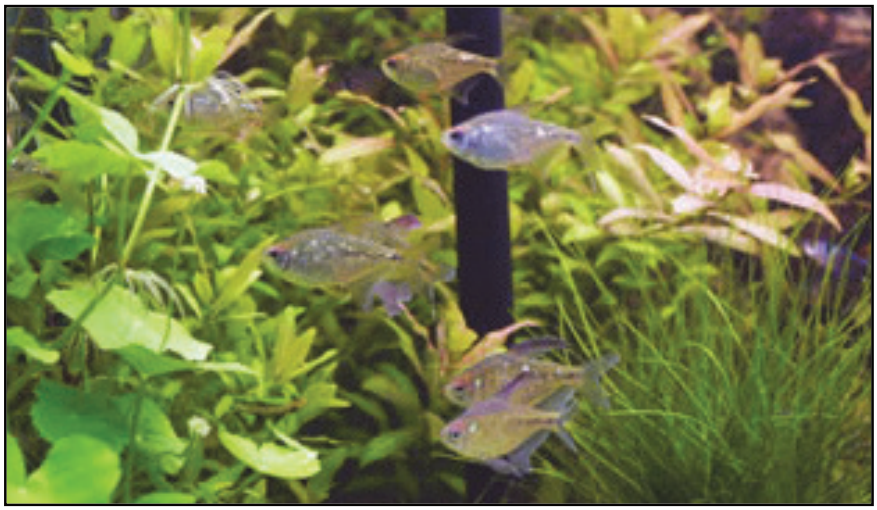


Photo: www.fishaliciousfish.blogspot.com

Species Profile

Species name: *Moenkhausia pittieri*
Synonym: *Moenkhausia pittieri*
Common name: Diamond Tetra
Family: *Characidae*
Order: *Cypriniformes*
Class: *Actinopterygii*
Maximum size: 2.5 inches (6 cm).
Environment: freshwater
Origin: South America - in the waters of Lake Valencia, Rio Bue, Rio Tiquiriti and in Venezuela
Temperament: Peaceful
Company: Are suitable for community aquariums.
Water parameters: Temperature 22-28°C / 72-82°F. ph. 5.5- 7.5
Aquarium setup: They prefer a clean well planted aquarium and enjoy more dimmed lighting which can be achieved with floating plants they also enjoy a lower pH and water filtered over turf which will also show up the coloring more.
Character: They are very peaceful and make a beautiful addition to any community tank. They live for up to 5 years and if well fed can show stunning colors. They truly glitter like their namesake with an opalescent shine of its scales in hues of orange, green, blue & purple. Everytime they swim in a different direction more colors can be seen. The more mature the more amazing the colors especially in males whose dorsal & pelvic fins take on a purple color.
Feeding: They are not fussy eaters and accept most foods, including flake food.
Breeding: They are easy to sex. The dorsal fin of the male is long and flowing. It is also more pointed and is sickle shaped. The female becomes full bodied while the male remains more slender. For breeding, a breeding tank needs to be set up (5 gallons is fine) and the pH lowered to 5.5 and the hardness of the water to less than 4 dGH. The tank has to be completely darkened and the light gradually added to induce spawning. The biggest challenge in breeding Diamond Tetra's is finding a compatible couple…they must be of the same size & age to spawn together.

Reference: www.aquaticcommunity.com/fish/diamondtetra.php

Izzy Zwerin ~ BAS

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 **(646) 269-5926** between 7pm to 10pm, Monday to Friday.

The Practical Plant
Chapter 3

Hello again. Picking up where we left off, we are going to get into lighting. But, to figure out what kind of lighting is right for you, we first need to figure out if you want to be "high tech" or "low tech" in your approach. They employ vastly different hardware setups and maintenance regimes.

The low tech approach:

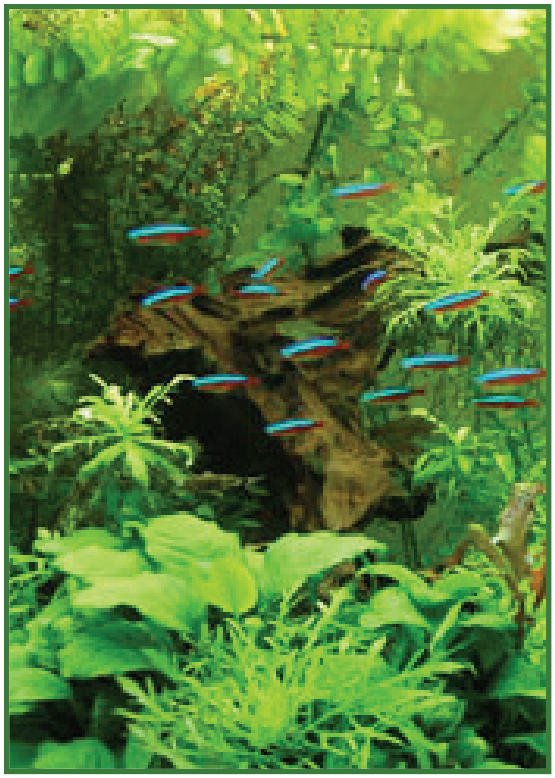
These are systems which rely on simple low cost equipment. To set up one of these systems, all you need is basic fluorescent lighting with a good reflector and something to provide a little water movement.

The lighting fixture you choose should provide 1-2 watts per gallon. Light does not penetrate water very well, so stay away from the really deep tanks. And that's it! You may only need a heater, depending on the fish you keep and your room temperature. These tanks require virtually no maintenance, and no plant fertilizers to fuss with. Now, you might be scratching your head at this point and asking yourself this question: Why doesn't everyone do it this way? Well, there is a down side to the low tech approach. Since your lighting will be of a low intensity, you will need to limit yourself to plants that can tolerate this. There are some good choices in this category: *Anubias*, java fern, *Bolbitis*, and others will do fine. To keep the system in balance, fish stocking

levels must be very, very low. If this sounds like the right pace for your aquatic garden, I would strongly suggest reading the *"Ecology of the Planted Aquarium"* by **Diana Walsted.** "Low tech" systems are the focus of this book and it is easily the best I have ever read on the topic. In my opinion, anyone who maintains a planted aquarium ("high tech" or "low tech") would benefit from reading this book.

The high tech approach:

If you are like me, then nothing short of dense, lush, colorful plants will do. I also like to keep some of the more demanding plants. The only way to do it is by going "high tech." This means higher maintenance and more equipment. The classic recommendation for lighting the "high tech" aquarium would be in the 2-4 watt range. I would consider this a starting point and adjust upwards for deeper tanks. Many people worry about having too much light and "burning" the plants. I personally have never seen or heard of such a case. This includes a technician at **Seachem** I spoke with who has 8.5 watts per gallon on her tank! What might happen is that your plants may reach their saturation point and have more light than they can use. On most of my tanks, I am using compact fluorescent lighting which runs anywhere from 5.2 to 6.5 watts per gallon. The plants look really happy, but I'm sure I didn't hit the saturation point on any of them.



The watt/gallon rule needs to be taken with a grain of salt, because many factors influence lighting intensity. Wattage is not a measurement of light output, but of power consumption. Your hair dryer may be 1800 watts, but you won't be growing any plants with it. Bulb type and ballast efficiencies, the type of reflector, and even the bulb spacing, are all variables in the lighting equation that will affect total output.

To get to the desired levels of lighting intensity, your basic fluorescent strip light won't cut it in a "high tech" system, but today there are many choices. Starting with the king of intensity, you have the Metal Halide fixture. Metal Halides are usually seen on reef systems, but I have heard these will really make the colorful plants look their best. I have yet to test this theory, but it sounds like overkill to me. They do have some serious drawbacks. The first is price. Not just the fixture, but the bulbs themselves are very expensive. This type of lighting also runs very hot.

If you are especially fond of fluorescent bulbs for some reason, there are the HO (high output) and VHO (very high output) systems. They look just like standard fluorescent bulbs, but, as the name implies, produce more light. These systems are a viable choice, but understand that you cannot use these bulbs in a standard fixture. They require different ballasts from standard fluorescent bulbs.

Fluorescent bulbs and neon bulbs have a lot in common. One of these commonalities is that as bulb diameter decreases, light intensity rises. The diameter of a fluorescent bulb is expressed as a letter "T" followed by a number. Regular fluorescent bulbs made are T5. T5 fixtures are available on the market. They come in the same three types as T12's (standard, HO and VHO). What I really like about these fixtures is the super low profile made possible by these extremely slim bulbs, and they run very cool. I recently got my first one. It is of the standard output variety. I have to say the jury

is still out, but the initial impressions are good. The fixture, price-wise, was a little less than the price of Compact Fluorescent (CF), but the bulbs are cheaper and last longer. Although I really like this fixture, I do not feel it is intense enough for a deeper tank. I use mine on a 20 gallon long. If you have a deeper tank, look into the HO and VHO units.

Compact Fluorescent (CF) lighting is extremely popular for high tech systems. I have found them to reliably provide high quality lighting. These are not your regular fluorescent bulbs. They look like a skinny bulb folded back on itself, and all the terminals are on one side. This is the type of lighting on most of my tanks. Works great! I've tried a few from different manufacturers and I really like those made by **Coralife**. They are low profile and appear to be well made. The fans are quiet, and they are competitively priced.

The latest thing in lighting is the LED (light emitting diode) system. That's right, LED! The lowly LED has actually grown up into a high intensity lighting fixture. And because it's digital, it offers more features than any other light system possibly could. The bulb life is phenomenal. This thing is really state of the art. The only problem is I'm afraid to ask how much ($$$).

No matter which type of lighting you choose, all have a usable bulb life. As the bulb ages thru use, it's changing in color and intensity (except the LED systems). So even if the bulb is not burned out, it may be time to replace it. Standard fluorescent bulbs are good for about six months. Metal Halide and Compact Fluorescent are good for about one year The T5's are supposed to last eighteen months.

The bulbs for all these different lighting types are available in different spectrums (colors). This is usually described as color temperature, measured in degrees Kelvin. This will tell you how red or blue the light will be. Plants seem to do best at color temperatures around 6700? Kelvin.

You will get the best lighting with a highly polished reflector. A fixture with an individual reflector for each bulb will give more light than a fixture with a single reflector for multiple bulbs. Unfortunately, I have never found a fixture with individual reflectors. It seems that this is only available on the retrofit kits which are meant to be installed into a canopy. So, if your setup includes a canopy, and you can use a screw driver, this would probably be your best choice.

The up side of investing in these kinds of lighting systems is that if you ever get tired of a planted aquarium (I really can't imagine this), then you can change the bulbs to the correct color temperature and switch to a reef tank.

The unfortunate reality is that we have only scratched the surface of what there is to know about lighting, but I do not have the space in this article to cover it all. You should also get familiar with the concepts of Lumens, Lux and PAR. If you would like to know more about lighting, *Freshwater and Marine Aquarium magazine* ran a pretty good two-part article on the subject which you will find in the November '06 and the December '06 issues.

Well, this about wraps up our hardware discussions. Thanks for reading. In the next article, we will tackle substrates.

Till then, enjoy.

Sue Speichert

Originally published in *Water Gardening* magazine, March/April 2000
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5 Easy Steps for the Perfect Spring Pond

Photo: **John Todaro**

No matter where we live, there's always a day or two in spring that are unusually warm and sunny, like the summer days that are just around the corner. Take advantage of those balmy spring days to get your pond into tip-top shape for summer. Take the time now to find and solve those pond problems before disaster strikes. This summer, you'll be glad you did.

Follow these five simple steps to spruce up your pond so that it's all set for the warm summer months ahead.

1

Check the Pond

First, take a critical look at your pond to see if something's out of place. Inspect your pond edges and take a close look at the water level. Make sure the pond is staying as full as it should. You never know where a small leak or spill can occur. If you've turned off your stream or waterfall for the winter, turn it on and check that everything's all right. A rock might have fallen out of place, or the soil might have settled in along a bog edge.

Clean up all fallen leaves in and around the pond. Use a vacuum to remove any organic debris on the bottom of the pond. We've decided that it's easier to just drain the pond and clean it if there's more than a half-inch of bottom sludge. You'll have to set up a holding tank for your fish, but it's worth the extra effort.

That muck in the pond bottom can harbor and grow many different kinds organisms that can harm the fish and pollute the water. These organisms respond to warming temperatures very quickly and can easily cause diseases and illness in your fish in the spring. The organic matter at the bottom of the pond also acts like a fertilizer to feed algae blooms once the weather and the water starts to warm. Save yourself a lot of agony and headaches later - clean the sludge out of the pond now, before it has a chance to work its summer mischief.

2

Check your Pump and Filter System

Take out your pump and make sure that it's clean and that it's working properly. Look for any cracks in the housing. Make sure the impellers run freely, without being blocked by dead snails or debris. It's amazing how much stuff can find its way into your pump, even when there hasn't been any activity in your pond. You'll be a lot less tense looking for spare or replacement parts now than you will be in the middle of summer when the pond has run dry, the temperature has soared to record levels, and your fish are in a make-shift holding tank in the garage or basement.

Check your filtration system and clean your filter media. If the filter material looks worn or dirty, or if it doesn't clean up well, then replace it with new media. Invest a few dollars now to improve your filter system. It will save you many more dollars this summer when the system will be hard at work combating algae and keeping your water crystal clear and free of ammonia and other harmful chemicals.

Add new beneficial bacteria to your pond. It may not do much when the water temperature is below 50 F. Just the same, it will be there ready to go into action as soon as the water warms. It's especially important to seed your filters with beneficial bacteria early in the spring. Algae begins to grow as soon as the water temperature in the pond rises. Don't wait until your water is green with algae - it will be too hard for your bacteria to catch up. If you use barley straw, add some new straw now so that it will be properly cured for summer. Leave the old barley in the pond for a few weeks or so until the new barley has a chance to begin working.

3

Check the Water Quality

Use a reliable test kit to check your water quality for ammonia, nitrite and nitrate. If you don't have a good test kit, by all means get one. It is a great investment and will spare you from worry and grief throughout the summer. If your readings are not in the proper range, you'll know about it right away and can take the necessary steps now, before your system is completely overwhelmed.

4

Check the Fish

Spring is a very stressful time of year for our pond fish. The water temperatures fluctuate considerably from day to night and from one day to another. The fishes' immune systems may not be up to the task. They have gone for several weeks or months without much food. Their hormones are starting to wake up and they are approaching the annual spring spawn.

Make sure your fish are ready for spring. Check them for any external signs of disease or injury. If they are not healthy, treat them and consider moving them to a quarantine tank until they have recovered. Remove sharp objects such as bricks or cinder blocks from the pond so that the fish do not scratch themselves during spawning.

Some pond-keepers add a small amount of salt to the pond or do a salt dip to give the fish a jump-start toward summer. Specially-formulated chemical treatments for the water, such as Koi Vital, also help pond fish make the transition from winter to summer more easily.

When you should start feeding your fish in the spring depends in large part upon your climate. If the water has been cold and frozen, it's best to wait until the water temperature is consistently above 50 F or 55 F for a few days before you begin to feed the fish. Feed them low protein food, and don't over-feed them. They will enjoy natural foods, too, such as peas, lettuce, or even duckweed. Make sure the food is high in Vitamin C and other nutrients. The fish especially need very nutritious food this time of year.

5

Check the Plants

Water plants that have over-wintered in the pond are starting to wake up for spring. Remove dead leaves from the plants, since the spent foliage will simply decay in the water and become fodder for an algae bloom as well as harboring pests and diseases.

If you moved your lilies, lotus or marginals to the deepest part of the pond to hibernate during the winter, move them up now so that they are closer to the water surface. The spring sun will warm the upper layers of the water first, and the lilies and lotus will start to sprout and grow. This is especially important for plants that don't like to be submerged, such as water forget-me-not and parrot feather.

Some plants are best transplanted very early in the spring. Iris are often transplanted before they have put out much growth, so that they won't be disturbed as they set flower and bloom. So, too, with lotus, which are best transplanted before they have started to sprout and grow.

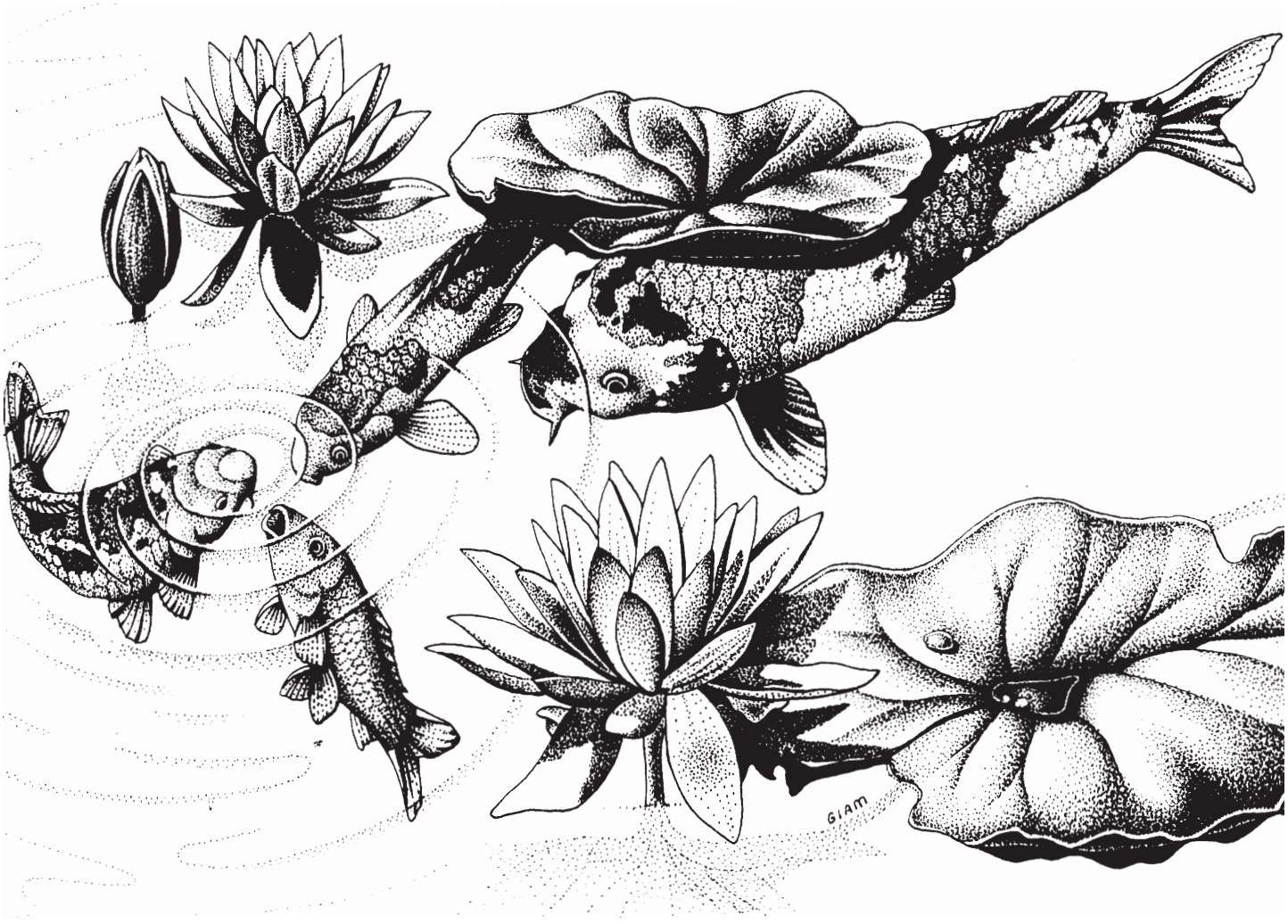
Most plants, though, can wait to be moved to bigger pots once it's warmer outside. This is easier on the plants, and easier on you too. At least it's a lot warmer.

Hardy water lilies and most marginal water plants may be transplanted when they are actively growing. Spring is the time of year to fertilize plants that are growing early, such as

marsh marigold and sweet flag. Wait until the water reaches 65 F before fertilizing waterlilies and lotus. They won't use the food anyway, and the fertilizer may begin to break down prematurely, leaching into the pond and contributing to an algae bloom.

Spring is the ideal time of year to clean and prep your pond for the warm summer months ahead. Check your pond for leaks. Clean up debris in and around your pond. Make sure your pump and filter system are working properly and replace used or worn parts, equipment, or supplies. Look at your fish closely, and give them the good food and good water quality they'll need to make the adjustment from spring through fall. Check your plants, too, moving them to shallower water where they'll get more of the warm spring sun.

Take care of potential problems now, before they have a chance to overtake you and your pond. Make this the summer to remember your pond because of all the fun, relaxation and enjoyment it gave you and your family.



Twyla Lindstrom-Peters
From "Fins & Friends" Regina Aquarium Society, Canada Aquarticles

Colisa chuna
the Honey Gourami

This is the smallest member of the Colisa genus with a maximum length of 5cms. It comes from the Indian sub-continent. Its body shape is typically "gourami" including the characteristic long threadlike extensions of the ventral fins (which actually house its taste buds). Females remain silver-grey to light yellow and develop a dark longitudinal stripe along their midline when excited (e.g., breeding season). When stressed, males lose their beautiful colour and resemble females. Otherwise, a relaxed, mature male develops a beautiful golden colour over most of the body with a brighter gold through the dorsal and pitch black along its underside including its mouth and face.

It is a very shy peaceful little fish ideally suited for a small peaceful community tank with low or no water circulation. It appreciates a well planted, sunny warm (22-26 C.) tank with lots of floating plant cover. They relish live food from brine shrimp nauplii to grindal worms and HYDRA! They will generally accept small pelleted and flake foods too.

Spawning can be achieved in a small (2.5 gal.), shallow (4-6 inches deep), well planted sunny tank. If an air source is supplied, it should be a slow, gentle corner sponge suspended up off the bottom 1/2 inch and away from the sides. The tank should be kept covered. If a group is used, a female will become heavy with eggs. One male will leave the group and construct a small insignificant bubble nest in a corner incorporating leaves such as water sprite. The male then displays his colours to attract the female under his nest. As she approaches, they "feel" each other with their "feelers". After a few approaches, spawning takes place in the usual anabantoid fashion (i.e. the male wraps around the female and, as they roll over, the eggs are expelled and simultaneously fertilised. The female is released and sinks to the bottom as the male gathers the eggs and puts them up into his nest. Then the activity is repeated until the egg supply is depleted). The male then guards the nest and tends to it, repairing and rebuilding it as needed. The female

leaves the area completely.

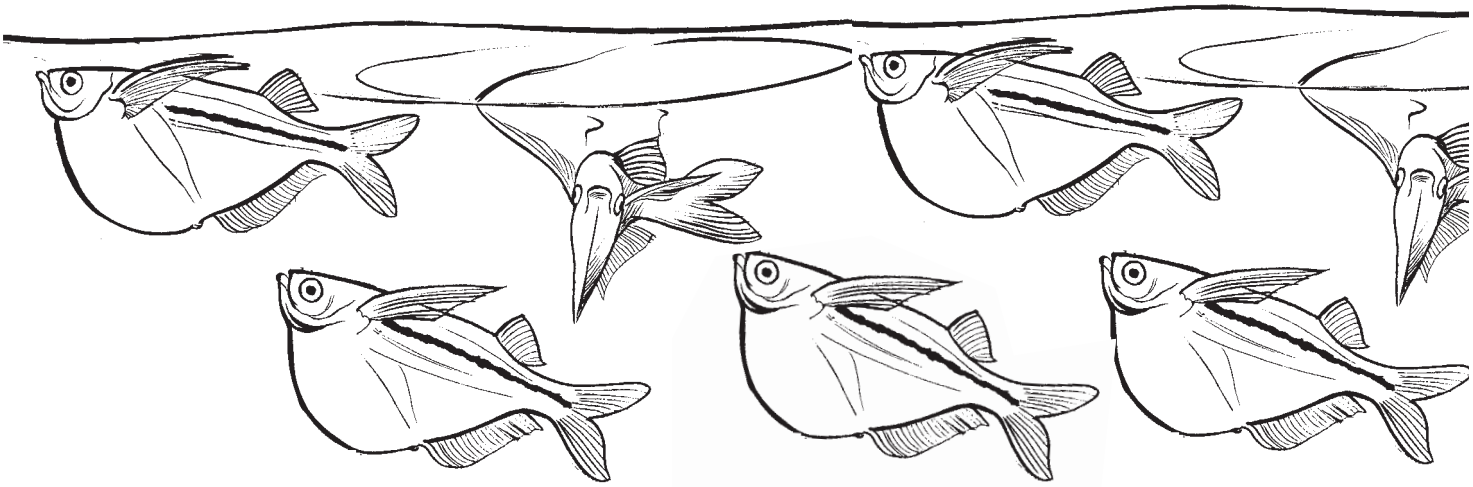
At this point, I remove the female and any other fish so the male can concentrate on his nest exclusively. (I haven't seen the male ever attack the female as some anabantoids are notorious for).

The eggs hatch in 24-36 hours at which point I remove the male too. The fry hang from the nest for 24-48 hours and then become free swimming. They are very tiny. They do well on infusoria and Liquifry for their first few days after free swimming. By one week of age, they can accept newly hatched brine shrimp and emulsified powder. Snails are a good addition at this point as they help keep leftovers in check. Small daily water changes should be done with a syringe or air stone. Take care to match the temp. and avoid air drafts (especially at 4-6 weeks of age) over the water when the cover is removed. Also avoid overfeeding as fouled water happens quickly and is quite lethal to these fry. Growth is slow but steady. They also remain quite sensitive to sudden changes in their surroundings (i.e., water pH, currents, lighting, new tankmates, etc.) for quite a while longer than other gouramis I've kept. Nonetheless, these are definitely one of my favorites.

Scientific Name: Colisa chuna "Gold"
Family: *Belontiidae*
Origin: Bangladesh
Adult Size: 2 inches (5 cm)
Social: Peaceful, suitable for community tanks
Lifespan: 4 years
Tank Level: Top, Mid dweller
Minimum Tank Size: 5 gallon
Diet: Omnivore, eats most foods
Care: Intermediate
pH: 6.0 - 7.5
Hardenss: up to 15 dGH
Temperature: 72-82 F (22-28 C)
Breeding: Bubblenester, the male will build a small nest in his territory, usually under a leaf, but also at the surface in a corner, if no suitable leaf can be found. If a female comes into sight the male will start to display almost vertically before her. If she's interested, the male will repeatedly swim 5-10 cm towards the nest, and display again until the female follows. After the couple reaches the nest, they will spawn below the nest and deposit the 1 mm eggs in the nest. As soon as eggs are in the nest, the male starts to build a real nest which can get quite big. The up to 300 eggs will hatch in 24-36 hours, and are free-swimming after a day. The male will care for the fry a few days more. If the fry are fed well the fish can be raised to adult size in approximately three months.

Sexual dimorphism: Females are larger than the males and usually have a brown horizontal stripe. The anal fin is a bit more pointy in males. Subdued males display a similar appearance as the females

REFERENCES:
http://aquaworld.netfirms.com/Labyrinthfish/Colisa/Colisa_chuna.htm
DrsFostersSmith.cvom



A Peaceful Oddball For The Community Tank

Family: *Gasteropelecidae*.
Common Name: Silver Hatchetfish.
Species: *Gasteropelecus sternicla.*
Range: Peruvian Amazon and Orinoco in Venezuela.
Habits: A top feeder, spends most of its time at water surface waiting for passing insects. Needs plenty of top space and adequate oxygen.
Size: 2 1/2 inches.
Water Conditions: Likes warm soft water with a pH of about 6.0 to 7.5.
Temperature: 73˚ to 81˚ F.
Diet: Prefers live foods like *Drosophila* flies and will take dry floating foods. Will not eat food that fall to bottom of the tank.
Breeding: Little is known about its breeding habits.
Sex: Distinctions are not obvious.
Remarks: Peaceful, makes a good community fish. Must keep tank covered... this fish is noted as a jumper. Best kept in groups of four or more.

REFERENCE:

• ***The Encyclopedia of Freshwater Tropical Fish***, Axelrod, Emmens, Burgess, Pronek, Axelrod, TFH Pub., 1986
• ***Aquarium Fish in Color***, J.M. Madsen, Macmillan Pub., 1975
• ***Aquarium Atlas***, Riehl & Baensch, Baensch Pub., 1987

A Peaceful Oddball For The Community Tank

The Hatchetfish comes from Amazonia. It is best to keep these fish in small groups. They are surface fish that have the unique ability of "flying" short distances. A tight fitting cover must be kept on the aquarium.

• Maximum Size: The maximum length is 2.5 inches.

• Minimum Tank Size: 20 gallons or larger tank is appropriate.

• Care Level: The Hatchetfish is a relatively hardy fish once it acclimates to the tank. On a scale of 1 –10, (10 being easy) it would rate a "6."

• Tank Conditions: Temperature 75 - 82°F; pH: 5.8 – 7.5.

• Description: The common hatchetfish has a convex body. The ventral fins are very small and the back is fairly straight. Pectoral fins are transparent and often measure up to one-half the fish's overall body length. The coloration is silver and the back is olive brown. The mouth is small and upturned. Depending on the angle of light, the colors can change from iridescent green to iridescent blue. A black vertical stripe extends from the gill cover to the base of the tail.

• Temperament: Hatchetfish are small, peaceful, surface-dwelling fish. They are skittish and should only be housed with peaceful fish of lower swimming levels. Hatchetfish are schooling fish that should be kept in groups.

• Diet: Omnivore Live mosquito larvae, Tubifex worms, crustaceans, Drosophila; high quality flake foods.

• Habitat: Provide with live plants, floating plants, rocks, roots etc. There should be gentle surface water movement. A tight fitting cover should be provided. Hatchetfish will jump from the tank. It is recommended to leave a 4-6" gap between the water surface and the cover.

• Compatibility: Hatchetfish in general can be kept with most other species that can handle the pH and temperature requirements. It is an active fish. It is best to keep in small groups.

Remember that as you look to add more fish to a tank, you will need to increase the tank size. As with all aquarium setups, whether it is fresh or salt, consideration needs to be given to the maintenance of water quality. Too many fish can result in poor water quality that can stress and even kill our fish.

Reference:

http://www.grizzlyrun.com/Pets/Fish/Freshwater_Fish/Common_Hatchetfish/Default.htm

Dan Hagan runs TheShrimp Farm.com.

The place to go for dwarf freshwater shrimp. Shrimp are the perfect aquatic inhabitants for your under water planted garden. If you're interested in keeping dwarf freshwater shrimp or have a question about them, go to Dan's blog site and ask your question. It's a great site with reliable and accurate information on dwarf shrimp.

YELLOW SHRIMP

Yellow Shrimp History: The Yellow Shrimp is a fairly recent color variation of the wild *Neocaridina heteropoda*. This color variation was originally bred in Germany and started to appear in American Dwarf Shrimp hobby in the early 2000's.

Yellow Shrimp Care: The care of the Yellow Shrimp is exactly the same as the Red Cherry Shrimp. They are undemanding when it comes to water parameters, as long as extremes are avoided and the parameters are stably maintained.

Yellow Shrimp Diet: The Yellow Shrimp is an Omnivore. While the Yellow Shrimp is a decent algae eater, when kept in larger groups, supplemental feeding is often required. Foods intended for bottom feeding fish and aquatic invertebrates make great foods. Vegetables that have been thoroughly cleaned and boiled until they are soft are also great foods.

Yellow Shrimp Breeding: Breeding Yellow Shrimp in the home aquarium is rather easy. As long as there is a mature male and a female in a well established, well maintained aquarium, they will breed. The male Yellow Shrimp is smaller and a little less colorful, while the females are larger and display deeper more vivid colors. Mature adult female Yellow Shrimp will often display a saddle on their upper back (seen in insert). This saddle is the female's eggs developing in her ovaries.

Yellow Shrimp Behavior: Yellow Shrimp are a very non-aggressive species of Dwarf Shrimp. The Yellow Shrimp is very active and will be often seen grazing for algae on plants, decorations and the substrate. They only become shy and hide after molting (when a shrimp sheds its exoskeleton in order to grow or breed).

Special Notes As with all aquatic invertebrates, it is important to make sure copper does not get into the aquarium. Copper is toxic to all Dwarf Shrimp. Many medications contain elevated levels of copper, so it is recommended not to medicate an aquarium with Dwarf Shrimp in it.

Scientific Name:
Neocaridina heteropoda (var. Yellow*).*
Other Scientific Names: *Neocaridina denticulata sinensis* (*var*. Yellow)
Common Name:
Yellow Shrimp
Other Common Names:
Yellow Cherry shrimp
Origin: South East Asia
Found in the wild: No

pH Range: 6.5 - 8.0
Ideal: pH 7.2
Temperature Range: 65° - 85° F
Ideal Temperature: 72°F
Hardness Range: -3.-15 dkh
Ideal Hardness: 6dkh
Life Span: 1 - 2 years
Size: 0.5 - 1 inch
Gestation Period: 30 days
Diet: Omnivore

Sherry Mitchell

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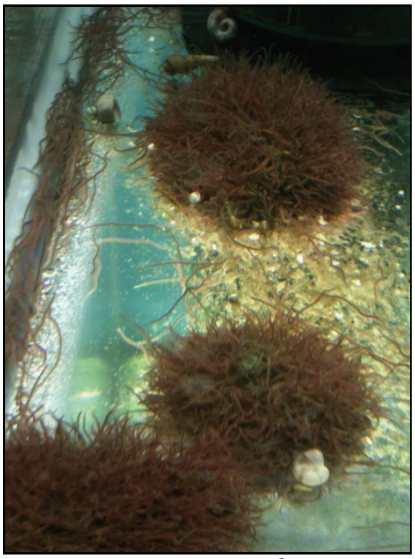
The Lazy Fish-Keeper

A new way to keep live blackworms

I'll admit it. I've let more than my fair share of live blackworms turn to a stinking, foul mess in my fish room refrigerator. I know a few of you have too (Gerry, I'm lookin' at you, bub.). After one meet, I came home with a half pound of worms and, being too lazy to rinse and refrigerate them, I decided to chuck them into an empty tank on the rack in my furnace room. I had seen live blackworms in the substrate of my fish tanks and figured that they could live in a tank without a lot of hassle.



The tank is a 5.5 gallon, bare bottom tank with an air driven box filter. It was clean and empty, so I took my chances. The first thing I noticed was that the worms sank to the bottom and started forming big living clumps. In the bag they looked very dark and inactive since they were chilled, but once in the warmer water (72-74 degrees) they colored up and became very active.

The next day the water was slightly foamy, so they got a 90% water change, with PRIME added to the fill water to dechlorinate. I gathered some of the worms in a baby brine shrimp net, rinsed them and fed all the fish. It was great as the worms were active and wriggling, getting the attention of all my fish.

I have a product from **Marc Weiss**, which is a live black worm food. I decided to add powdered spirulina to that and threw in a bit of powdered red, freeze-dried cyclopeze as well. I keep this in an old fish food container in the fish room and sprinkle a bit of it in the tank after water changes. My intent is to gut-load the worms so they stay healthy and nutritional to my fish -- something you can't get when they are in the fridge long-term. When the "worm powder" hits the water the worms go crazy for it. The live clumps constrict and contract to bring the food into the middle of each pile and it just disappears.

The "end result" is a light brown mulm on the bottom of the tank, which I carefully siphon from the tank with water changes. Water changes are done every three days, while trying not to get to many worms into the Python tube. You can even put a brine shrimp net over the tube to prevent worms from entering, but with practice, I've managed to avoid it. Live worms are fed to the fish twice a week. In all, I'm satisfied with this new way of keeping my worms. They are healthier, more nutritional to the fish, easier for me, and I've enjoyed watching them set up house in my fish room.

Izzy Zwerin - BAS

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 **(646) 269-5926** between 7pm to 10pm, Monday to Friday.

PROPAGATING:

Hygrophilia polysperma

This is a great plant, period. Alright, I'll elaborate. I have a specimen of this plant currently in my guppy tank. Although at one time or another it has probably visited most of my tanks, or at least some cuttings from it. My specimen is a cultivar known as "Sunset Hygro."

This plant used to be readily available at your local pet shop. Unfortunately some fool (either intentionally or accidentally) released some into the wild where it became a problem. To make a long story short, the plant is now on the Federal Noxious Weed list and can no longer be shipped across state lines. What was once a popular plant is now completely unavailable. The only way you will ever find this plant is if some club member brings cuttings in to auction.

My Guppy set up is in a 25 gallon tank. I keep all the males in this aquarium. The pH is about 6.8, temperature is kept at 78˚ and the GH runs about 60. This aquarium has 130 watt Compact Fluorescent lighting (Coralife "Aqualight" double strip) and CO_2 enrichment. A Fluval canister filter (model #204) with the output being directed through a submerged spray bar, is doing my filtration. I use the Estimated Index system of fertilizer dosing. This means that once a week I perform a large water change (50-75%). This is usually done on Saturday. Don't worry about the large volume of water being replaced; your fish will love it. This large water change is necessary to reset the system. Then on Saturday, Monday and Wednesday I dose the macronutrients, and on Sunday, Tuesday and

Thursday I dose the micronutrients. Friday I take the day off. The lighting is timer controlled and on for 12 hours a day.

It is a shame that this plant has become so difficult to find. This plant has a lot going for it. It is easily cultivated, hardy and attractive. It's a stem plant that is tolerant of a wide range of aquarium conditions. It can get rather large, but can handle the aggressive pruning needed to keep this plant under control. The plant has leaves that are lanceolate shaped and about 3" long. Two leaves, opposed to each other, emerge at each node. The leaves of the following node are rotated 90˚ around the stem axis. The "Sunset Hygro," when grown in proper lighting, is a bright light green color. Each leaf is etched in deep veins which are almost white in color. As the plant grows taller (and even closer to the light), the leaves start to take on a pinkish coloring. At the top of the plant, the vegetative tip can become almost magenta. It has grown well for me under a variety of lighting and water conditions. Because of its branching and spreading nature, it takes on a rather bushy and wild appearance. This is one of those plants that will help maintain good water quality because it is such a fast grower and an aggressive feeder. This fast growth and heavy feeding habits make it a great plant for combating algae. One of the really interesting things about this plant is the coloring. It is my understanding that the coloring of this plant is due to the activity of a virus which it harbors.

You heard all the good. Now we have to cover the bad and the ugly. This plant, as discussed, is very fast growing and highly aggressive. When I say fast growing I mean that at the end of the day you can see that the plant has grown since you turned the lights on in the morning. Sunset Hygro will branch profusely; virtually every node it has will branch unprovoked. Any branching stem which comes in contact with the substrate will take root and sprout more plants. It will also send out side shoots to root new plants, and of course taking cuttings will work as well. To propagate this plant all you really need to do is turn it loose in your aquarium. This plant behaves like it is on a mission to take over the planet! That is the big problem with this plant, and how it landed on the Federal Noxious Weed List. It will need frequent, and at times, quite aggressive pruning. Overall it is a highly decorative plant that can be a real eye catcher in the aquarium. I highly recommend it, especially to those of you who enjoy lots of pruning.

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


Photo: John Todaro

What do I need for a Successful Reef Tank?

Is Planning an important step?

The most important thing to do is to plan. 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 invertebrate, 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, should preferably be near a sink (for water supply and drain). Will the floor carry the weight of the tank? It should be 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. 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 prefilter every week? Make limewater as needed for evaporation? Remove algae as needed? These are all responsibilities you have to take into consideration.

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 prefilter)*	$ 150	
9. Material, 6 packages floss prefilter	$ 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 (with 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	
19 Test kit for calcium	$ 12 - $24	
20 Specific gravity meter	$ 12	
21 Misc. (books, power strips, Kalkwasser, trace elements, etc.)	$ 100	

APPROX TOTAL: $1,906.00

* 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.

What else do I need?

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 prefilter, 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!

Livestock and approximate cost:

1. Mat for live rock frame (egg crate)	$ 15
2. Sand aragonite: 1 10-lb. bag	$ 10
3. Live rock: 1.5 lbs. per gallon, x 55 gallons = 83 lbs. @	$ 10 $ 830
4. Turbo snails (herbivores): 10 @	$ 5 - $ 50
5. Coral banded shrimp: 1	$ 15
6. Cleaner shrimp: 4 @ $15	$ 60
7. Serpent starfish (scavengers): 2 @	$ 12 - $ 24
8. *** Brittle starfish (scavengers): 2 @	$ 12 - $ 24
9. *** Hardy corals: 4 @	$ 45 - $ 180
10. Tridachna clam: 1	$ 50
11. Yellow tang, small: 1	$ 35
12. Hippo tang, small: 1	$ 35
13. Sailfin tang, small: 1	$ 35
14. *** Basselette: 1	$ 35
15. *** Goby: (your choice of type): 1	$ 35
16. *** Misc. invertebrate (your choice): 1	$ 35
TOTAL	**$ 1,468**

***To keep costs down you may use less livestock on the items marked.

Frank M. Greco,
AnimalForum.com staff
From Frank's Aquarium.com

How to Quarantine Fresh and Salt Water Fish and Invertebrates

While at first thought quarantining your newly purchased fish or invertebrate may seem to be a royal pain, this simple procedure can, in the long run, save you from a number of problems that could endanger the well-being of the animals already present in your system.

One should assume that all fish, either captive bred or (especially) wild are carriers of one form of nasty pathogen or another. From bacteria to protozoas to viruses...any or all may be waiting to cause you grief. Why take the chance of introducing something like that into an already established system when a simple quarantine can take care of this potential problem. I know...I know... you don't have room to set up another tank. Well, in most cases all you need is about 240 square inches of floor space...which just happens to be the size of a 10 gallon tank. Nor need the tank be left up and running all the time. It can be set up at a moment's notice to hold that one of a kind animal you have had your eye on. And, you don't need all the fancy bells and whistles you would expect to find on a permanent set up.

In fact, all you'll need is listed here:

-10 gallon tank (or larger if need be)
- cover, preferably with light
- 2 or 3 pieces of 6" long 2" PVC for hiding places
- air pump
- heater and thermometer
- biologically active sponge filter
- net
- crushed oyster shell or calcareous gravel
- ammonia test kit (fresh and salt water)
- AmQuel or similar product
- nitrite test kit (freshwater)
- antibacterial medicated food
- anti-parasitic medicated food
- citrated copper (for marine fish)
- copper test kit (for marine fish)
- malachite green (for freshwater fish)

As you can see, not much is needed to get started, In fact the most costly item on the list is the canopy and light. This need not be an expensive fluorescent light. An incandescent fixture will do here.

STARTING OUT

How do you start? Quite simple. You will be setting up your tank the same way you'd set up any tank, with the exception of painting the OUTSIDE bottom of the tank black or in some way blocking the bottom of the tank (note that NO substrate is used in the quarantine tank, hence the need to black out the bottom). This will give the fish the illusion of a solid bottom, and place them more at ease (with fish, as with humans, psychological well-being goes a long way to aiding with physiological well-being).

Next, place the tank on a nice sturdy, level surface (a stand made for this purpose, preferably), and fill it with 10 gallons of water from your already established aquarium. Add the heater, PVC pipe pieces, a small amount (a handful is usually good) of crushed oyster shell or calcareous gravel in a mesh bag (to provide some buffering) and the biologically active sponge filter, and...VOILA!...a quarantine tank is born!

"Hey!", you might say, "Where do I get a biologically active sponge filter?" There are several options here. Perhaps your local dealer can sell you an active sponge filter. (A note to dealers here: since it is a good idea to have auxiliary aeration in your systems, in any event, why not utilize sponge filters? This way, when your customer needs an active sponge filter, you have plenty on hand to sell). Failing this, perhaps a fellow hobbyist can help you out. However, the easiest thing to do, in my opinion, is to always have a sponge filter on hand. This is easily accomplished by placing a working sponge filter (or two) in your sump or directly in your tank (hidden behind some decorations so that it is not visible when viewing the tank). After 4 to 6 weeks you will have an active sponge filter! After the quarantine period is over, all you need do is remove the sponge filter from the quarantine tank, rinse it under hot water, and place it back into your tank/sump for bacterial re-colonization. Really, what could be simpler?

O.K., now the tank is up and running. All environmental parameters check out (so far). What next? You'll want to add the fish, of course. Follow whatever acclimation procedures you normally follow (which, in my case, consists of netting the fish from the bag to the tank while yelling "ACCLIMATE!"). NEVER dump bag water into your quarantine or main tank. Always net the fish from the bag. Allow the fish 24 hours to settle in before starting treatment.

FRESHWATER QUARANTINE PROCEDURE

For those of you quarantining freshwater fish, please read on. For those dealing with marine species, please skip down three paragraphs.

For freshwater fishes, the quarantine procedure is quite simple:

First, you will want to feed your fish an antibacterial medicated food twice a day for 14 days. Feed as much as the fish will eat in 2 minutes or so at each feeding. Bacterial disorders are the most common cause of death in fishes, and it pays to give a preventative treatment here. If you are dealing with wild-caught fishes, you will also want to supplement this with an antiprotozoal medicated food (antibacterial diet at one feeding and antiprotozoal at the other) to rid these fish of whatever intestinal parasites they may be carrying. There are antiparasitic diets that contain both an antiprotozoal and an antibacterial, and this type of

food can be substituted in place of the two separate diets.

Next, you will want to treat the fish with malachite green. I know some of you must be shaking your heads, saying that malachite green will kill some freshwater species. NONSENSE! When dosed correctly, malachite green is safe for even the most so-called sensitive species.

The dose I use, and have been successful with, is 0.05 PPM malachite green for three treatments, one every other day. At this level, your fish should not experience malachite sensitivity. Of course, dosing at 0.05 PPM means doing more than adding one drop per gallon. To figure out the correct amount of liquid to add, you take the concentration of malachite green listed on the bottle (in percent), and convert it to milligrams per milliliters (10 percent = 1000 milligrams per 100 milliliters of water). Divide the milligrams per milliliters by the final concentration. This will give you the results in milliliters/liters. To convert to gallons, divide the number of liters by 3.8. For example, we have a 10 gallon tank, want a final concentration of 0.05 PPM (or 0.05 mg/l. It's interchangeable for our purposes), and we are using a 0.75% malachite green solution.

So...0.75% = 7.5 mg/milliliter. 7.5 mg/ml divided by 0.05 PPM (or mg/l) = 1 ml per 40 gallons. Since 1 milliliter is about 16 drops, we will need 1/4 of that, or 4 drops per 10 gallons of a 0.75% malachite green solution.

Now for the kicker: most malachite green based medications advise ONE DROP PER GALLON of a 0.75% solution. This works out to 2.5 times the amount actually needed. No wonder some hobbyists lose fish when using malachite green: they have severely overdosed! Anyway...to continue...

You want to dose at least three times, once every other day for three treatments, all the while feeding the medicated food(s). While the malachite treatment will last only six days, you really want to continue the quarantine for another eight days. If after this time period no obvious signs of disease are present, you may safely add the fish to your established tank.

If obvious signs of another illness show themselves (for example, a lesion caused by an external bacterial infection), you will need to treat that as well, in conjunction with the malachite treatment. Nitrofurazone, or any of the furan-type antibiotics will usually effect a cure.

Please note that malachite green, being an organic dye, will stain clothing, skin, the silicon sealant in your tank...almost anything! If fabrics or silicon have become stained, you will need to live with it since this stain is not removable. Malachite green inadvertently gotten on skin should be rinsed off as soon as possible. The stain left behind will wear off within a few days.

During this 14 day period, you will want to monitor both the ammonia and nitrite levels in the tank, and take appropriate actions if you notice an increase. If the ammonia level is slight, the addition of AmQuel or similar product will take care of it. Just be aware that AmQuel will lower the pH of the system, and constant use can bring about pH readings of 4 or lower! Hence the use of crushed oyster shell or calcareous gravel in the tank: it will help in maintaining an acceptable pH range. If the ammonia level continues to rise, a water change (up to 50%) is in order. Remember to re-dose the appropriate amount of medication after the water change. If the nitrite level begins to climb, the addition of aquarium salt at one teaspoon per gallon will negate its toxic effects.

MARINE FISH QUARANTINE

If you have a marine system, the process is a bit more complex.

First, the acclimation of the new fish is the same, but you want to give the new arrival at least 24 hours to recuperate from bring moved before you begin medicating. If the animal does not begin to eat within 24 hours, hold off treatment until it does begin to take food.

Next, you will want to add enough citrated copper to bring the level up to 0.15 PPM (you can really go as high as 0.20 PPM, but no higher, please). I know many of you use heavily

chelated (or bonded) coppers, but I advise against their use. First off, in order for copper to be truly effective, it must be in its ionic state. Heavily chelated coppers, by definition, are not in that state, and so are less than useful. The fact that, in my experience, crabs and shrimp can live in systems treated with heavily chelated copper attests to its ineffectiveness in most cases. (Try that in a system treated with an ionic copper. The inverts do not live very long). Secondly, the level produced by some chelated coppers may be far higher than is actually needed to control the disease organism (which should also tell you something. At as high a dose as some of these chelated coppers produce, the fish should be dead). This higher-than-needed dose is actually detrimental to the fish in the long run in several other ways: gill degeneration, liver shutdown, anemia, compromised immune system..the list goes on. There is absolutely NO need to subject the fish to levels far above what is needed to treat the condition.

How do you know how much citrated copper is in your system? You'll need to get a good test kit in order to measure the level. Personally I advise the powdered reagent kits over tablet or dipstick based kits, as they are far more accurate. (I have checked many a test it against atomic absorption readings, and many are consistently are off, especially when testing marine water).

In the beginning, you may find it difficult to maintain a 0.15 PPM level due to the calcareous material in the system. This is to be expected as the carbonate reacts with the copper, forming copper carbonate. At first, you will need to check the level twice a day, and add copper as needed to maintain the 0.15 PPM level. Once you get two consecutive readings of 0.15 PPM, you can consider that day one, and you can begin monitoring the level once a day, adding copper as needed.

You will want to continue this regime for 14 days. During this treatment period, you will also want to feed the fish an antibacterial medicated food. Doing so does help the fish fight off systemic bacterial problems since the copper treatment does tend to compromise the immune system to a degree. After 14 days, do a 50% water change (to bring the copper level down), and wait 24 hours after that before adding the fish to your established tank.

As with freshwater fishes, if obvious signs of any other diseases show up, treat with the correct proprietary medication for the appropriate period of time. For copper sensitive species, you can use malachite green at 0.10 PPM (which ends up being 8 drops of a 0.75% solution per 10 gallons). Treat every other day for three treatments, wait two days, and repeat. As always, monitor water quality and take appropriate action if it degrades. Please note that this treatment is NOT as effective as copper, and will not result in the same kill rate of parasites. There are other non-copper based medications that can be used (such as chloroquine phosphate, pyrimethamine, quinacrine and other proprietary medications. In my experiences with them, most are FAR less effective than is copper, and should be used only as a last resort. Also note that I have not mentioned the use of formalin as a viable treatment. There are MANY chemotherapeutic mixtures that contain formalin. However, IMO and IME, formalin should NEVER be used as part of a mixture. If one is to use it (and there is no reason why one should), it should be dosed separately, and at its correct therapeutic dose. The fact that, if dosed incorrectly, you can kill your fish quickly and that it can be injurious if gotten into one's eyes is reason enough to stay away from formalin.

QUARANTINING INVERTEBRATES

As for invertebrates, there really is no set procedure for quarantine. Luckily, few inverts can be considered carriers of pathogens. A simple 14 day quarantine without any chemotherapeutics is your best bet. It is important though, to fully quarantine all new corals, both stony and soft, before introducing them into an established tank. With all the new epizootics occurring on the reef, there is a great chance of introducing these pathogens into your tank, thereby wiping out your coral collection.

NOW WHAT?

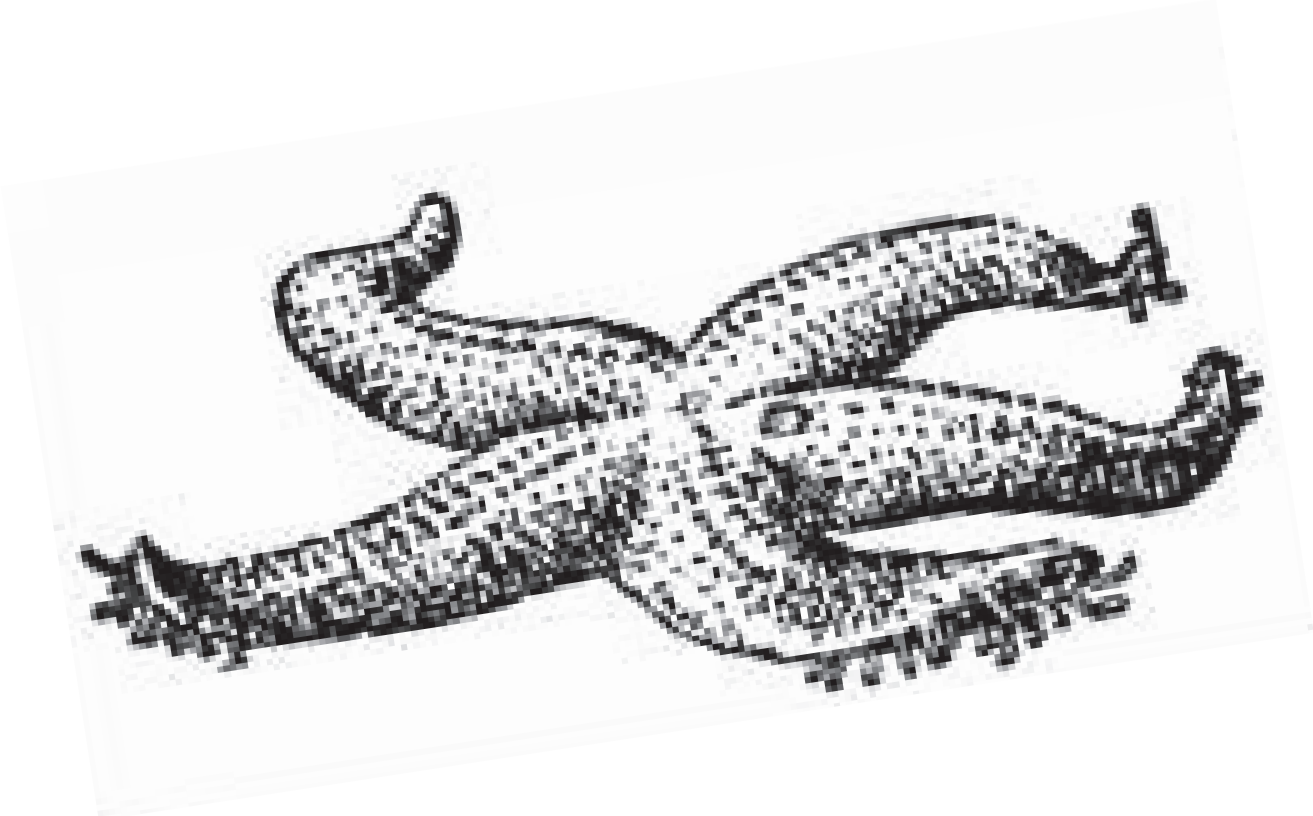
O.K., your fish are through quarantine, and there are no new fish on the horizon. Now what? Simply break down the tank. Rinse everything (except the sponge filter) out with warm (NOT HOT OR BOILING) water into which a little bit of bleach has been added. (Please wear eye protection and gloves when using bleach in this manner. Also realize that bleach will eat some fabrics, and cause color loss in fabrics not intended for bleaching). The sponge filter should be rinsed in HOT water, with no exposure to bleach (some sponge material used in sponge filters reacts poorly to bleaching). Allow everything to dry, and put it away until it is needed again.

So you see, setting up and using a quarantine tank is not difficult or complicated. Remember, it is better to control a disease in a smaller tank, treating beforehand, than it is to treat in a large system. A little preventative medicine is your best bet.

AUTHOR'S NOTE

The information and procedures contained within are based upon techniques (with minor modifications) that have been used for many years at the public aquarium at which I work. I am not saying that this article contains the final word on the subject. Far from it. However, it does contain what I consider a practical quarantine procedure which any hobbyists can utilize to the benefit of their hobby. All opinions expressed herein are my own, and are based upon my experiences with particular products and/or techniques.

Comments regarding this article are appreciated, and should be sent to franksaquarium@hotmail.com



Exchange Editor's Report

The Exchange Editor's job is reading publications from different clubs and suggesting items of interest to our members.

Cichlid Chatter, Greater Chicago Cichlid Association, (Illinois), Jan/Mar 2011.
Pseudototrooheus sp Msobo Breeder Report, by **Don Weger**.
Everything You Read About Fish Keeping is BS – Including This Article, by **Mike Garibaldi**.
Power Consumption in the Fish Room, by **Shawn Kopinski.**
Visit to Scott Womack's Fishroom, by **Radek Kowalski.**

Paradise Press, Long Island Aquarium Society, March 2011.
Go For It! by **Vinny Kreyling**. This is a great article on the need for GFIs (ground fault interrupters) in a fish room.
Lucky, by **Vinny Kreyling**. He discusses pet superstores vs. Local fish shops.
It's a Fact of Life in the View... From The Other Side of the Tank, by **Margaret Peterson**. Margaret tells of losing a large number of *frontosa* when they sprayed the ceiling with lacquer spray prior to painting. Be wary of toxic fumes.

Fish Talk, Atlanta Area Aquarium Association, Georgia, Apr. 2011
Exciting News from Ken Seiders at the Lettuce Box… By **Ken Seiders**.
(topic: *Ceratopteris thalictroides*).
Rockin' In the Rift Lakes by **Michael A. Risko, Jr**.
South Side of the Sky – The Southern Lake Malawi biotope aquarium.
Breeding *Pelvicachromis subocellatus*, by **Ken Seiders.**
Vinegar Eels, Their Culture and How to Feed the Little Guys, by **David Ramsey**.

Fincinnati, Greater Cincinnati Aquarium Society (Ohio), May/June 2011.
Albino Bushy Mouth Pleco, Ancistrus sp. Spawning Report, by **Jerry Riegel**.
Crenicichla Regani, by **Steve Smith**.
Cynotilapia Afra "Hai Reef", by **Jerry Riegel**.
Steatocranus casuarius "Buffalo Head Cichlid", by **J.J. Smith**.

The Darter, Missouri Aquarium Society, Inc. Jan/Feb 2011.
Fish Stories by **Tony McMillan**: The Mosquito

Fish worth their weight in gold…or put the @#$%^&* fish in the @#$%^&* pond!
Oh is for Oscar, The trials and Tribulations of an Oscar Breeder, by **Dave Ayres**.
Controlling Insect Pests in the Fish Room, by **Kevin Kelly**.
Keeping and Breeding *Brachyrhapsis* sp. "Costa Rica", by **Wayne Toven** GAAS.

Finformation, Greater Pittsburgh Aquarium Society, Inc. (Pennsylvania), May 2011.
The Big-Eyed Shell Dweller, *Neolamprologus similis*, BAP article, by **Susan Everett**.

Cichlidae Communiqué, Pacific Coast Cichlid Association (California) Mar/Apr 2011.
Keeping and Breeding *Placidochromis* sp. *"phenochilus Tanzania"* – The Star Sapphire Cichlid, by **Sam Borstein**.
Ask Pam #99, by **Pam Chin**. Pam answers questions in her regular column about cichlids with great expertise.

Cichlid Blues #175, Pacific Coast Cichlid Association (California), May 2011.
Entirely Lost: Inane Ramblings of a Novice Fish-keeper, by **David Fraguglia**.
Reflections: Save the California Cichlids!, by **Ron Coleman**.
The Last Word, by **Kevin Plazak**.
Michael Pyle (first printed in CC#156). Michael writes about his success with *Julidochromis regaini* "Sumbu," a Lake Tanganyika cichlid.
Ask Pam #98, by Pam Chin again. Pam again answers questions in her regular column about cichlids with great expertise.

The Granite-Fisher, New Hampshire Aquarium Society, , Volume 20, Number 4 April 2011.
Jonathan Farrand writes an article titled "Progression of a Planted Tank, Tank growth and Development: Stage One." He notes how a lot can change when you decide to keep aquarium plants. Especially when you let Mother Nature do the work.

The Gravel Gossip, Diamond State Aquarium Society, Volume 48, Nos. 8, September 2011, The Amateur Hour by **Bob Berdoulay**. Another nice story of Bob's reintroduction to the aquarium hobby by his son. He started with a variety of tetras and a few cory cats. Later he attacked the rainbow dwarf cichlid or "krib," known in past times as the *Pelmatochromis kribensas*.

Tank Topics, Greater Akron Aquarium Society, (Ohio).
The Dirt on Soil-less Worm Culture, by **Joe Reich**. Joe gives directions and has photos of how to set up a worm culture in a plastic food container with plastic needlepoint canvas and dry cat food pellets.
Cryptocoryne usteriana, by **Dave Williamson**. Dave writes about propagating this aquarium plant.

Tank Tales, Aquarium Club of Lancaster County (Pennsylvania). March 2011.
My Dream Tank: On a Fixed Budget, by **Scott Mclaughlin**. Scott describes and creates his cichlid tank…great photos.
Selecting Your Aquarium, by **Michael Steffen** (Twisted Fisher). Michael gives advice on the placement of your aquarium. Is there electricity close by? Is there access to a water supply? Is there a window nearby? Is the floor level and sturdy? What equipment is needed? (tank, hood with light, filter, substrate, decorations, etc.) Good article.
Michael's Frog Farm: Spawning African Frogs, by **M.J. Shrom** (reprinted from March 1989). M.J. writes about spawning *Xenopus* species of African frogs and how to tell the difference between the dwarf frogs and the regular sized frogs. This is a must read article if you are raising African frogs.

Splash, Milwaukee Aquarium Society, Inc. (Wisconsin), December 2011.
Paramecium, by **Ted Judy**. Ted tells us how to culture this protozoan as live fish food.

How Things Work, Aquarium Filters Part 2, by **Andy Hudson** who tells us all about sponge filters.

Splash, Milwaukee Aquarium Society, Inc. (Wisconsin), February 2011.
How Things Work, Aquarium Filters Part 3, by **Andy Hudson**. Andy describes how power filters work. Some need to be "primed" to create a vacuum to pull water through them, some are with bio wheels, some that go inside the aquarium. Very interesting reading.
Spawning the Bolivian Ram, by **Eric Rogne**. Eric does a great job describing the spawning behavior of this South American dwarf cichlid.

Splash, Milwaukee Aquarium Society, Inc. (Wisconsin), August 2010.
Marosatherina ladigesi, by **Eric Rogne**. Eric describes this Celebes Rainbowfish and reports on its spawning behavior and raising the fry.
How Things Work, Glass Aquariums Part 2 and Part 3, by **Andy Hudson**. In these two articles, Andy explains how aquariums are made, covering the following topics: The glass, frames, silicone and construction.

That's it for now. See you all next time. Happy fish reading everyone.

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