modern AQUARIUM

August 2022
volume XXIX
number 6

Greater City Aquarium Society - New York

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AQUARIUM

Series III Vol. XXIX, No. 6 August, 2022

ON THE COVER

Our cover photo this month is by Joseph Ferdenizi, and shows a pair of *Nothobranchius guentheri*, a beautiful annual killifish native to Africa. For more information on keeping and breeding this gorgeous little fish, see Joe's article on page 11.

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In This Issue

From the Editor

by Dan Radebaugh

This issue of Modern Aquarium continues the pattern we've pretty much stayed with this year—something old, something new, something borrowed, and so forth. For the old, we continue our review of **Modern Aquarium** covers, this month featuring our front covers from 2005. How many of these do you remember?

We also look back at an article from December, 2009 by Elliot Oshins, titled "The Bobbeh Meisseh." I hope you'll enjoy it!

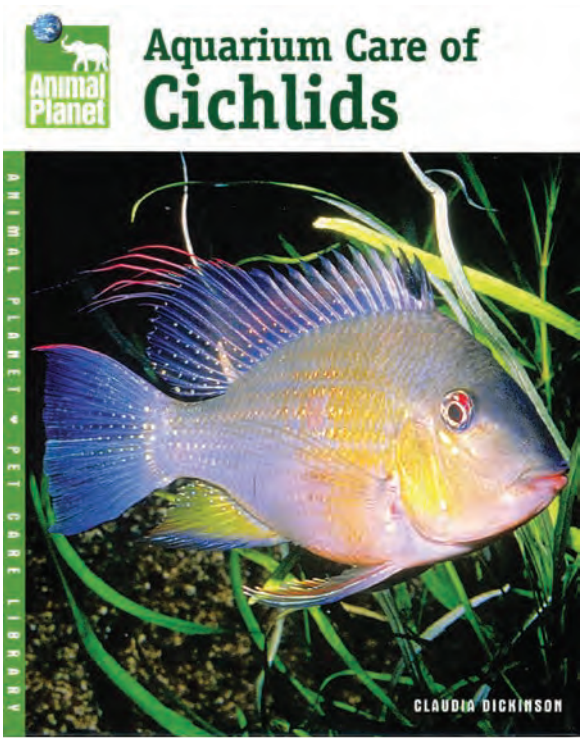
More currently, Joe Ferdenzi treats us to another wonderful killifish article and cover photo, featuring the beautiful African annual killifish *Nothobranchius guentheri*. I hope you enjoy it as much as I did! This article is followed by "Playing in the Fishroom," a brief review of box filters by Dan McKercher.

We also have a couple of exchange articles this month. The first is by Mike Hellweg, whom many of our members know, entitled "The Bulldog Tetra, *Rachoviscus graciliceps*, which

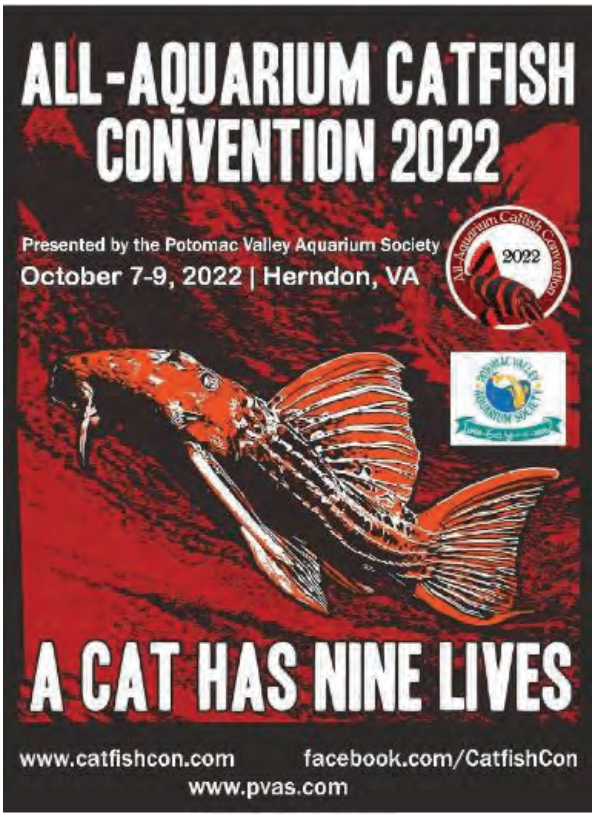
originally appeared in the Missouri Aquarium Society's publication, **The Darter**. The other, also from **The Darter**, is by Micah Issitt, and is entitled, "On Poisonous Plants, Some in Native Water Gardens." Our "Fishy Friends Photos" may be found on page 20.

Don't overlook pages 22 and 23, which show GCAS member discounts at local fish shops.

As we have become accustomed, **Modern Aquarium** favorites The Undergravel Reporter ("The Cambodian Sting") and Fin Fun ("Auction Action") complete the issue.



by Greater City member Claudia Dickinson
(Animal Planet® Pet Care Library)
Hardcover – Also available on Amazon Kindle
https://www.amazon.com/Aquarium-Cichlids-Animal-Planet-Library/dp/0793837774



GCAS Programs 2022

March 2	**Scott Dowd** *Project Piaba*
April 6	**Rosario LaCorte** *Images From A Lifetime of Fish Breeding*
May 4	**Warren Feuer** *Shell Dwelling Cichlids*
June 1	**Dr. Enea Parimbelli** *Voyage in Lake Tanganyika*
July 6	**Joseph F. Gurrado** *Reef Keeping*
August 3	**A Night at the Auction**
September 7	**Andreas Tanke** *Plecos of the Rio Xingu*
October 7	**Gala Buffet Dinner** *Douglaston Manor*
November 2	**TBA** *TBD*
December 7	**TBA** *TBD*

Articles submitted for consideration in ***Modern Aquarium*** (ISSN 2150-0940) must be received no later than the 10th day of the month prior to the month of publication. Please email submissions to gcas@earthlink.net, or fax to (347) 379-4984. Copyright 2022 by the Greater City Aquarium Society Inc., a not-for-profit New York State corporation. All rights reserved. Not-for-profit aquarium societies are hereby granted permission to reproduce articles and illustrations from this publication, **unless the article indicates that the copyrights have been retained by the author**, and provided reprints indicate source, and that two copies of the publication are sent to the Exchange Editor of this magazine (one copy if sent electronically). For online-only publications, copies may be sent via email to gcas@earthlink.net. Any other reproduction or commercial use of the material in this publication is prohibited without prior express written permission.

The Greater City Aquarium Society meets every month except January and February. Members receive notice of meetings in the mail or by email. For more information, contact: Dan Radebaugh at (718) 458-8437, email to gcas@earthlink.net, or fax to (347) 379-4984. For more information about our club or to see previous issues of ***Modern Aquarium***, you can also go to our Internet Home Page at http://www.greatercity.net, http://www.greatercity.org, or http://www.greatercity.com.

President's Message

by Horst Gerber

Wurst Case Scenario? Sci-Fi Documentary? It Could Have Been? I have no recollection of my dad, but let me tell you what could have happened. My dad went missing on the Russian front in WWII when I was one year old. When my dad was young his best friend's parents owned a butcher shop. In those days the children usually followed in their parents' footsteps. I don't know what my father's dad did for a living, but he and his friend used to hang around the butcher shop, delivering packages and doing other odd jobs.

One thing led to another, and my dad eventually became a butcher (but hated it—especially killing the animals). He said the worst was killing sheep, with their big eyes. So he started making sausages and hot dogs, and had great success. Before long the whole neighborhood started buying at his friend's butcher shop—to the point that the parents of another friend, who also had a butcher shop, fell on hard times. So my dad started making sausages for his other friend in the evenings. One day his boss said to him, "I don't know where they got their recipe, but it's almost like ours!"

Some time after that my dad changed jobs, becoming a butcher on a cruise line, where he established himself as a sausage and hot dog maker, and was also known to make excellent meat sauces. I could have learned from him and perhaps have become Chef Boyardee! But back to my dad. The cruise ships sailed all around the world, often for months at a time, and on one cruise my dad eventually ended up in New York, where his brother had a boat building business on City Island. That's why I ended up here.

His brother begged him to jump ship and not go back to Germany. "The war is coming and you will be drafted!" My dad did not listen, but perhaps if he had stayed in the USA I would be famous as the Gerber Baby Food chef, or the Gerber Wurstmeister, with a chain of Gerber Wurst Stores. Not the wurst thing that could have happened. But I shouldn't complain. I am satisfied that I became a cabinet maker. Not as famous as Gerber Toilets (another Gerber—no relation) or another Gerber (also no relation) who was a body and fender man and who hated waste, waste, waste! In the old days they had to mix paint colors in five-gallon buckets, and the leftover paint was discarded, so he invented the spray can, got a patent on it, and became a very rich man! Choose your ancestors well!

Horst

GCAS Thanks You!

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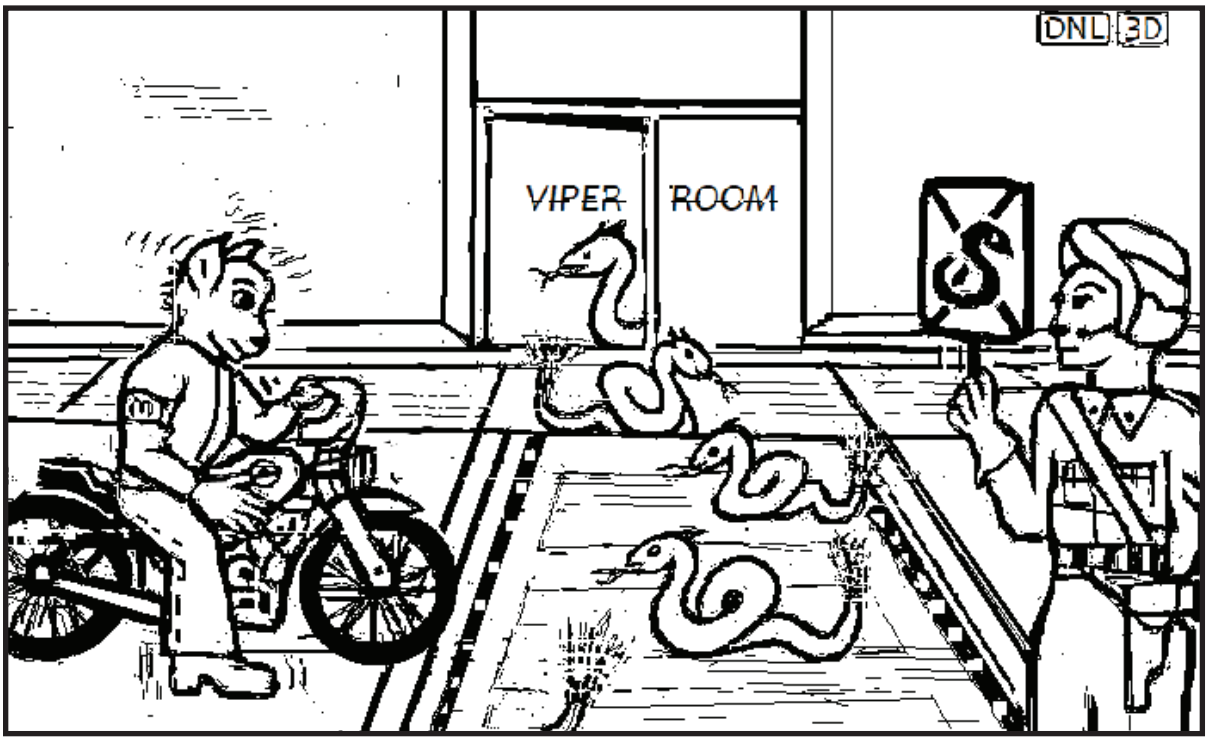
July's Caption Winner: Al Priest



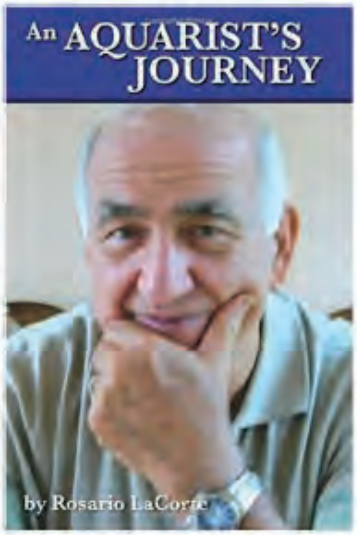
I wanted to get a Python Clean and Fill, but I must have made a wrong turn!

An Aquarist's Journey

Rosario La Corte is one of the world's leading authorities on breeding fish and he has written numerous articles and books, contributing greatly to our understanding of fish and their habits.

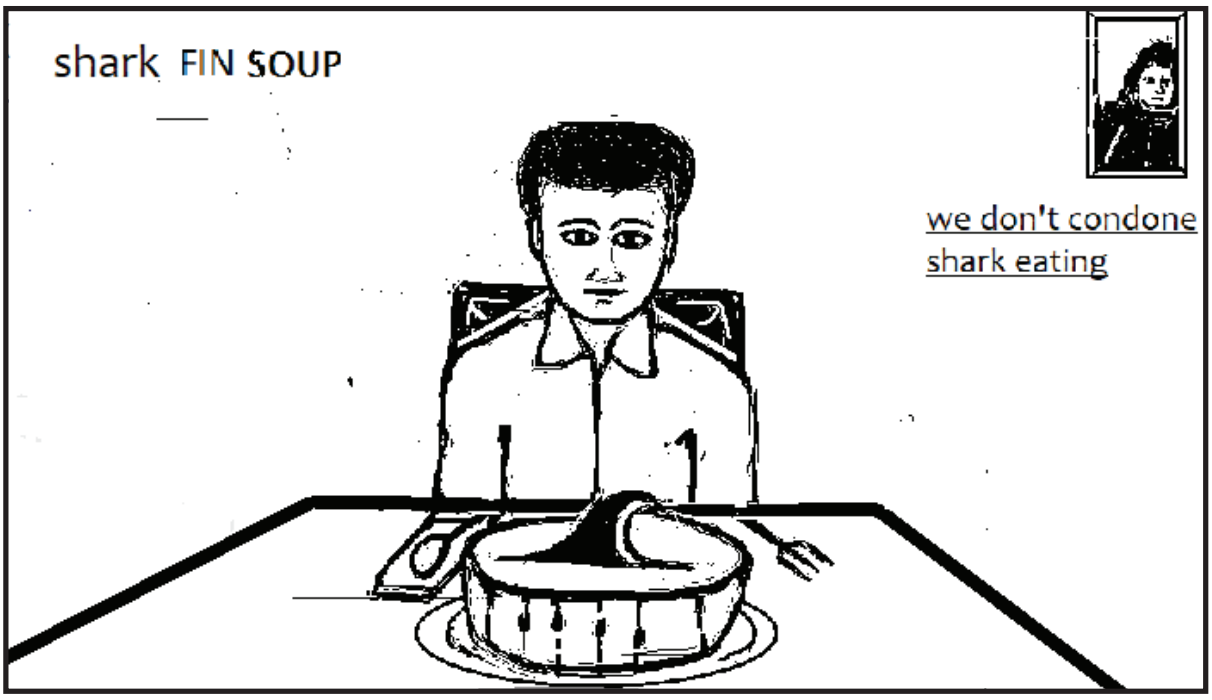
Now, for the first time, here is a compilation of his travels, adventures, successes (and, very occasional failures) all relating to collecting, keeping, and breeding fish, and in his own words (and edited by **Modern Aquarium**'s Editor, Dan Radebaugh).

Available in softcover at Amazon.com



The **Modern Aquarium** Cartoon Caption Contest

Modern Aquarium has featured cartoon contests before, and they're back! You, the members of Greater City get to choose the caption! Just think of a good caption, then mail, email, or phone the Editor with your caption (phone:347-866-1107, fax: 877-299-0522, email: gcas@ earthlink.net. ***Your caption needs to reach the Editor by the third Wednesday of this month****. We'll also hand out copies of this page at the meeting, which you may turn in to Marsha or Dan before leaving. Winning captions will earn ten points in our Author Awards program, qualifying you for participation in our special "Authors Only" raffle at our Holiday Party and Banquet. Put on your thinking caps!*



Your Caption:

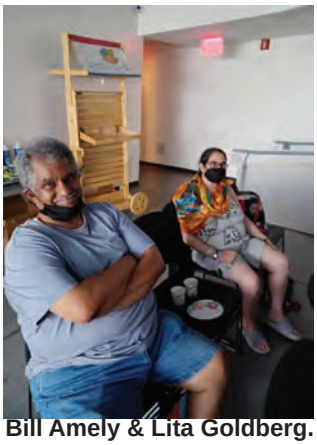
Your Name:

Pictures From Our Last Meeting

Photos by Leonard Ramroop

Our speaker Joe Gurrado getting us ready to begin the evening's program.

Our tech wizard Jason Kerner, ready for showtime.



Bill Amely & Lita Goldberg.

Our audience paying close attention to Joe's presentation on saltwater fishkeeping.

Richie Waizman receiving his Bowl Show ribbons from judge Joe Gurrado.

May Bowl Show Winners:

1 Tony Siano
2 Richie Waizman

June Bowl Show Winners:

1	Richie Waizman	Frontosa
2	Tony Siano	Angelfish
3	Mario Bengcion	Betta

July Bowl Show Winners:

1	Richie Waizman	Half-moon plakat
2	Richie Waizman	Blue & Red Half-moon

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Breeding
Nothobranchius guentheri

by Joseph Ferdenzi

I enjoy keeping and breeding exotic killifish. Included in that is the experience of breeding fish from a small subset of that group known as annual killifish. If you call yourself a true aquarist, you owe it to yourself to try breeding an annual killifish at least once in your life. So in this article I am going to relay to you, step by step, how to breed a beautiful African annual killifish. These steps describe how I do it—follow them and you will not fail. Instead, you will have one of the most astounding experiences to be had in the aquarium world.

The first thing you must prepare is the spawning medium. For this you will need a small glass or plastic jar with a lid. Fill the jar halfway with tap water, then place two peat pellets with their wrappers removed into the jar. Peat pellets are round disks of compressed peat sold in gardening supply stores, and used for starting seeds. Next, place a small handful of coconut fiber in the jar. This coconut fiber is often sold in pet shops as bedding for lizards, and comes either loose or in "bricks." Replace the lid and shake. Do this every day until the medium is waterlogged and sits at the bottom of the jar.

Tank with breeding bowl

Set up your tank. I recommend a 5½ gallon tank, but a 10 gallon tank will work just as well. The tank must have a tight cover, with only a small opening for an airline hose that is going to operate your box filter. This hole must be very small. Use tape if you have to, in order to cover the hole in such a way that there is no gap whatever. Killifish like to jump! I cannot stress this enough. Tight fitting cover with NO openings! The box filter should contain a two-inch layer of crushed coral gravel between two layers of filter floss. Add one tablespoon of salt with no additives (I use canning or pickling salt) for every five gallons. *Nothobranchius* are susceptible to protozoan infections such as "ich" and "velvet," but the salt prevents that. No heater is necessary. If your room temperature is 72-75° F, that's fine. The pH is not critical—anything around 7.0 is good.

I usually add some non-rooted plants such as *Anubias* or water sprite. I do not use gravel in the tank. Plants provide hiding places for the female and help keep the water healthier. These plants do well in dim light, and you should not use bright lighting because it promotes algae growth and makes the fish uncomfortable.

Once the tank has "aged" for a week, it is time to add a container with the spawning medium. My preference in containers is these little round bowls that I bought at Dollar Tree (I'm sure you can find them at other stores as well). Because these bowls have rounded sides, they tend to help keep the medium from floating out when the fish are disturbing it with the spawning process. I fill these bowls about ⅓ of the way with the previously mentioned waterlogged spawning medium. Then fill the rest with aged water. Now gently lower the bowl into the aquarium. Some of the medium may float to the top, but that's not a problem. The photo below shows the bowl and medium inside the tank.

Now you are ready to add the *guentheri*. I recommend having two females to one male, but a pair is fine. Where do you get *guentheri*? Well, you can forget about pet shops or wholesalers. They can, however, be found online, and because they are small fish, they are easy to ship. If that doesn't work for you, contact me (you can do so via the Greater City Aquarium Society website), and I'll make sure you get a pair. A full grown male is about 1.5 inches, while the female is slightly smaller. A male is shown in the foreground on the front cover of this isssue.

Feed them good quality food. Newly hatched brine shrimp is one of their favorites. They relish all kinds of live foods, but will also take some frozen foods. I only use live foods: newly hatched brine shrimp, daphnia, blackworms, and tubifex worms.

Let the pair spawn for about three weeks. In the meantime, prepare your next jar of spawning media. Do water changes (50%) every two weeks. Remember to add the appropriate amount of salt (about a teaspoon for 2 gallons, or a tablespoon for 5 gallons).

After three weeks, remove the spawning bowl and pour the contents into a fine net. Squeeze the media until no more water runs out. Invert the contents of the net into a small plastic tub. Place the lid on the tub and shake it vigorously for 10 seconds. Lift the lid off, and wait 10 more seconds while air enters the media. Re-seal the container and mark the lid with the date you collected the media. Place the container in a dark location where the temperature is a constant 75-78 F. On a calendar, mark a date exactly 3 months from the date you collected the media.


Female

You can refill your spawning bowl with the waterlogged media from the jar for as long as your fish look vigorous. This could go on for a good six months. Store as many 3-week spawns as you wish. On the appointed date, dump the media from your plastic tubs into a small plastic container such as a shoebox or a small plastic tank. Pour a half gallon of aged water over the media. Wait 24 hours. Then, using a flashlight or other lamp, carefully examine your shoebox. You should see numerous small fry swimming about. It's an amazing process!

Using a turkey baster or similar device, move each fry to a similar sized container that has been half filled with aged water. The fry don't all hatch at once, so this removal process might go on for a few days. Once you have removed all the fry, remember to dissolve about a half teaspoon of salt in a cup of water and add it to the new container.

The fry can immediately accept newly hatched brine shrimp. Sometimes I give them vinegar eels for the first few days, but that is not necessary. As they grow, the fry should be moved to increasingly larger tanks. I usually move them from the shoebox to a 2½ gallon, and then to a 5½ gallon tank.

If possible, as the fish begin to sex out (the males are readily distinguishable by their bright red tail), you should separate the males from the females. This allows the females to grow better and become better breeding stock.

I have been breeding *guentheri* for some ten years. It is an easy process to repeat, but the fascination of seeing "mud" turn into live fish never seems repetitious. Rather it is always a new thrill to observe this cycle of life replicated at home.

The Museum of Aquarium & Pet History

https://moaph.org/

Playing in the Fishroom

by Dan McKercher

My favorite box filter is the Jumbo Round Box Filter with base—4 3/8" diameter x 5 1/2" high. It comes from Jehmco.com. These box filters come with a bit of a story. Jehmco acquired the filter rights from a defunct company and still offers them for sale. There is more to this story I'm sure. What I like about this filter:

1. Large container to add many types of media.

2. It seems very sturdy, unlike some other products that easily crack and parts break off making them almost useless.

3. Removable cover that allows fish to pick at the media to get to the natural food that they enjoy. Some other box filters require the cover for it to work properly.

4. The uplift makes it harder for fry to get into it and become stuck in the bottom, like what happens with filters that have a large opening, in order to use an air stone to help improve the water draw.

5. Great price, and even better if you buy 24 at a time.

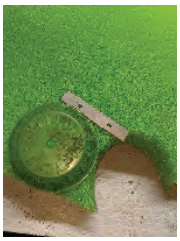
What I do *not* like about this filter:

1. The cover ought to fit tightly onto the top the way the Lee filters do. This one comes off very easily. If you pull the filter from the tank by its air line the top comes out along with the filter's contents. Some use a rubber band to keep the filter together.

2. The filter works *so* much better with a lift tube (sold separately)! The cover stays on better with it. A small complaint, but if the lift tube were part of the purchase it would make it a home run! The tubes are sold in 36" lengths, and they do cut them shorter to make it easier to ship. I chose 12" lengths. I cut to my desired length, depending on the depth of the tank, by scoring around the tube with a sharp blade and snapping it. A side note—you *do* need to remove the lift tube extension in order to remove the cover.

3. The base snaps on and can easily fall off. I like that it snaps off when there are a bunch of snails in between the base and filter. However, it is sometimes a pain to get it back on. Maybe it would be better if the filter did not have a base and instead had an extended lip so it could be secured in the gravel that way.

So now on to my using this filter. I feed Repashy gel food to my fish. I find that using it gets the little guys to grow faster than using flake food. I used floss in the filters. When I started using Repashy I found that the floss was becoming clogged quickly with what seems to be a jelly type of slime. I pulled the tops off the filters to allow the fish access to the floss. The fish fell in love with the slime that was clogging the floss. Then came the issue of filter floss being torn out of the filters. Became a real mess once the corys and plecos found the new buffet. Broke their hearts when I started to put the covers back on.



So after some thought I came across 30 ppi 2" thick aquarium-friendly foam. Found it on Ebay. It was light green. This is good so that you know better when it is dirty. With a 4" paint scraping blade I cut round pieces to put on top of the media in the box filter. As long as I cut the foam a bit larger than the cover it didn't matter how ugly the cut was, just as long as there were no gaping holes in the sides when it was inserted. I used scissors to cut a slot to allow the air and lift tube throuogh it.

The result is the best of both worlds: the benefits of a box filter being able to have things like crushed coral, peat moss and such, along with the benefits of a sponge filter that allows fish to pick the top media for the little yummy critters that they seem to like.

The Bulldog Tetra

Rachoviscus graciliceps

By Mike Hellweg, CFN
(Certifiable Fish Nut)

Reprinted from The Missouri Aquarium Society's ***The Darter*** *Vol. 46 No.4, July/August 2020*

We're all familiar with many of the so-called "bread and butter" tetras that are usually found in fish stores and even big box stores around the world. Tetras like neons, serpaes, black neons, Colombian redfin blues, bloodfins, glowlights, bleeding hearts and a few others are almost always

in stock. Some of the less common, but still popular tetras like cardinals, rummynoses, ember, emperor, blue emperor and blind cave tetras are also pretty well known. They're such a big part of the hobby that they've had the moniker "bread and butter" associated with them, meaning that they are literally sure sellers and put bread and butter on the shop owner's table.

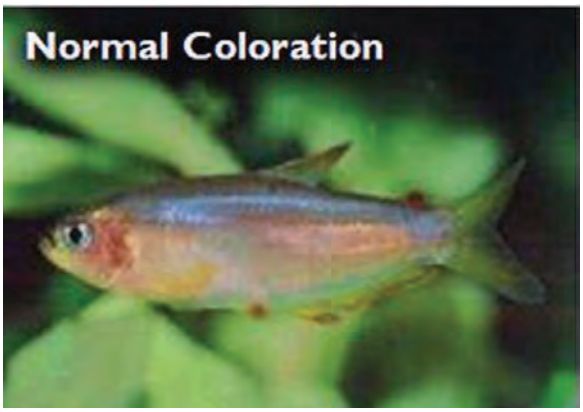
But there are so many more tetras out there, and many of them are rarely seen in the hobby, but definitely deserve our attention. The bulldog tetra is one that you shouldn't let pass by if you happen to see it. They are one of the "chunky" bodied tetras, similar in size and shape to the more familiar emperor tetra. They have a blunt, rounded snout with a toothy under-bite that gives them their common name of bulldog tetra. While they look tough, they are actually great community tank fish, though they look their absolute best in a group of 8 or so in a planted tank.

In full color, males are a dark bluish purple below the lateral line and a dark purple-black above it. The adipose fin is bright red. The anal fin is bright yellow outlined in red. The caudal and dorsal are lemon yellow. Females are a dull pinkish-purple overall. Males top out at about 2 inches, with females reaching about a quarter-inch less.

One of the most unusual things about them is that males "flash" for one another when displaying, and for the girls when they are courting. They flash two oblong oval shaped gold spots along the lateral line that just appear as if out of nowhere and disappear just as quickly. The first time I saw it, I was surprised and had to sit and watch them for a half hour or so just to be sure I really saw it.

Bulldog tetras have only been known in the hobby for about 20 years or so, and have only been known to science since 1981. They come from small coastal rivers in southern Brazil. They are exclusively found north of Rio de Janeiro in the southern part of the state of Bahia near the popular resort town of Cumuruxatiba. They are found in clear water streams with slow flow, and water that is just slightly acidic with a total hardness of around 200 ppm. Due to their proximity to the coast (sometimes less than a couple of football fields away from the Atlantic), they can tolerate, though they do not require, a bit of salt in their water. Temperatures fluctuate between 70 and 78 degrees Fahrenheit year round.

Unfortunately, due to their limited distribution they are considered endangered in the wild, as any major climatic event could irreparably harm the wild population. Fortunately, care in our aquaria is fairly easy, and our St. Louis area tap water is ideal. They thrive at a pH around neutral, with water about 125 ppm total hardness, with low to moderate carbonate hardness—exactly what we get from the Missouri River over much of the year.



A twenty gallon long type tank is perfect for a group of 8 - 10 adults. Adding a mature sponge filter or waterfall type power filter is perfect to maintain water quality and provide a bit of current. They don't even need a heater in their tank. As long as you are comfortable in the room, they will be, too. They seem to prefer fluctuations in temperature, and spawned readily for me in a tank that often saw temperatures in the low 70s Fahrenheit.

In the wild they seem to be mostly insectivores, so replicating this diet in our aquaria is optimal. They will eat commercial flakes and pellets, frozen meaty foods of all kinds, especially brine shrimp, Mysis shrimp, and bloodworms; live foods like daphnia, flour beetles, mini mealworms (*Tenebrio obscurus*), adult brine shrimp, *Gammarus*, young cherry shrimp, Grindal worms, white and blackworms, and even chopped earthworms. Famed breeder Rosario La Corte also recommends feeding tetras finely chopped market shrimp (I use canned "mini shrimp" found with tuna in the grocery store) and rehydrated freeze dried krill, also chopped into bite sized pieces after it has been soaked for 20 minutes or so.

A regular diet of these meaty frozen and live foods will quickly bring them into spawning condition. Breeding takes a bit of work, but it's not too difficult. Clean water, good food and a place to lay eggs and for the fry to get a good start is all that is needed. They are most easily bred in the manner similar to other tetras like emperor tetras.

Set a couple of pairs up in a 10 gallon tank with a mature sponge filter bubbling heartily so that it creates a slight current, add a large pile of Java moss or similar plant like Susswassertang, and clean water. Give them a lot of live and frozen meaty foods at least twice a day, and change at least 50 percent of the water every 5 to 7 days, but don't gravel vac the bottom.

Rachoviscus graciliceps and cousin Rachoviscus crassiceps, are both CARES species. If lucky enough to find either, grab them! Both are endangered and you're unlikely to see either again soon.

After about two to three weeks, start looking under the pile of moss every day. From this point there are two options. The first is once you start seeing youngsters, remove the parents and start feeding the tank live baby brine, microworms, and similar small live foods twice or three times a day. Soon the youngsters will start coming out when food is added, and before long they will be swimming above the plants instead of in and under them. The second is to remove the larger juveniles as you see them under the plants, and leave the smaller fry in the tank with the parents. The adults pretty much ignore the youngsters, but if you let a few of the older siblings remain, they will consume their younger brothers and sisters, and you won't see many fry until these older fish get large enough to join the adults.

Rachoviscus graciliceps is a CARES species, as is its cousin *Rachoviscus crassiceps*, which has been very rare in the hobby. Care for both is very similar, so if you are lucky enough to find *Rachoviscus crassiceps*, grab them! Both are listed by the MMA (Brazilian government authority) as Endangered due to limited habitat, and even with the loosening of Brazilian fish export laws, it is unlikely that we will see either of them coming any time soon.

They are long lived (my original fish lived for nearly 10 years), and I occasionally see them at aquarium club auctions around the country, so they are occasionally available through hobbyist channels, if not occasionally through the trade. If you see either of them, be sure to grab a group of 8 - 10, put them in a planted tank, and enjoy! And don't forget to sit in front of the tank and spend time just watching your fish!

THE BOBBEH MEISSEH*

Story and Illustrations by
Elliot Oshins

This article first appeared in the December, 2009 issue of ***Modern Aquarium****, Series III, Volume XVI number 10,*

In an article called "Remarkable Creatures" in **The New York Times** Science Section of October 20, 2009, author Sean B. Carroll writes about the ability of fish to learn to discriminate shapes and forms. At the University of Queensland in Brisbane, Australia, a research team led by Ulrich E. Siebeck trained damsel fish to eat from a feeding tube by attaching a variety of visual stimuli. Needless to say, I found this to be a very interesting and informative article.

And speaking of fish stories…

In the 1960s, I lived in Jackson Heights, Queens. One summer night when coming home from work, I stopped by Coral Aquarium to pick up some bloodworms for my fish. After that I stopped at Mac's Pub, my local watering hole on 37th Avenue, for a cold one. There, as usual, was Mac, the owner, pouring the locals their usual Happy Hour fare. Mac and I had a lot in common: I would tell him stories about tropical fish, and Mac would tell me stories about his mother's uncle Nigel, a fish and art aficionado. A man after my own heart.

Again as usual, when the place emptied out Mac poured himself a small glass of fine Port from his "private stash," and walked down to the end of the bar where I was warming my usual barstool. I really don't know if his stories were true or not, but at the time they seemed fascinating and informative. Since Mac was the consummate storyteller and I had no place to go, I was all ears.

Mac's Uncle Nigel was from Cambridge, England. A professor at the university there, he was a well-known botanist and an artist who dabbled in watercolors. His specialty was landscapes of the English countryside. Uncle Nigel also had another passion. He was a lover of cats. In fact, he had six cats: two British domestic short-hairs and four Cornish Rexes.

In the small hamlet where he lived was the local pub, "The King's Fish & Chips," where Nigel was affectionately known as Nigel's Fish & Cats. Around 1896, the university sent Nigel to Africa to study, sketch, and do watercolors of the local plants. Early one scorching afternoon while traveling in the Lake Tanganyika area, Nigel decided to take a swim in a lake. There he saw different schools of fishes: blues, oranges, yellows—a brilliant array of colors. Quite an assortment, he thought. However, upon diving a little deeper, he came across a school of small, inch-and-a-half to two inch, vertically striped fish. Having never seen this kind of fish before, he became very curious and engrossed in their look and, more importantly, in their behavior. He noticed that the fish were swimming in and out of shells. At that point, Nigel decided that he would return to the lake the next day and capture a few to take back to England. So the next day, his trusty guide provided him with a few waterproof containers, and between the two of them they were able to catch at least twenty-five of the extraordinary little fish. His guide was also able to secure some of the shells that these fish called home. When the time came for the professor to leave Africa, he was able to transport at least ten fish and some shells back to England.

Upon arriving at home, he quickly set up one of his tanks for his new tenants. At that time, the professor had no idea that the fish were *Neolamprologus multifaciatus* (a shell dweller), and lived in empty *Neothauma tanganyicense* (snail) shells. What he also soon learned was that not only did the fish use these snail shells as dwellings; they also used them as spawning caves. Nigel then got this brilliant idea: he wanted to see if he could breed the fish without the shells.

Nigel visited the town pottery and asked Ian, the town potter, to make him an 8-inch by ten-inch castle. Upon its completion, Nigel gingerly took the castle home and carefully placed it in the tank (now containing his new fish but no shells). Nigel treated his guests very well. He changed the water every other day, and fed them culinary delights, such as chopped up worms. After two months of this routine, not a single baby was born. Frustrated, Nigel decided to put back the snail

shells, and after doing so nature took its course, and babies were born. His students were happy, as the professor was so ecstatic that his fish was virtually all he spoke about.

On or about July 21, 1897, castles in fish tanks became more than just a mere aquarium decoration. Story has it that several of the townspeople who saw Nigel's fish tank fell in love with the castle and bought castles for their own homes as *chachkas*, even though they had no tanks. The last I heard, Uncle Nigel got married, and it turned out his wife was even more into fish and fish tanks than he was. Talk about getting lucky and hitting the jackpot!

I personally have a fifty-five gallon tank housing *N. multifaciatus*. The bottom of my fish tank is covered with a special fine sand that brings up the pH level, and shells for my fish to breed and live in. The fish move the sand that covers part of the shells. I put in sand, and somehow when I return a few hours later, the sand has inexplicably changed shapes. The fish are not only expert diggers, but also consummate architects of sand design. As the fish form colonies, I recommend that you feed brine shrimp to the babies, and their adult parents will also eat the shrimp. No one ever turns away shrimp cocktail!

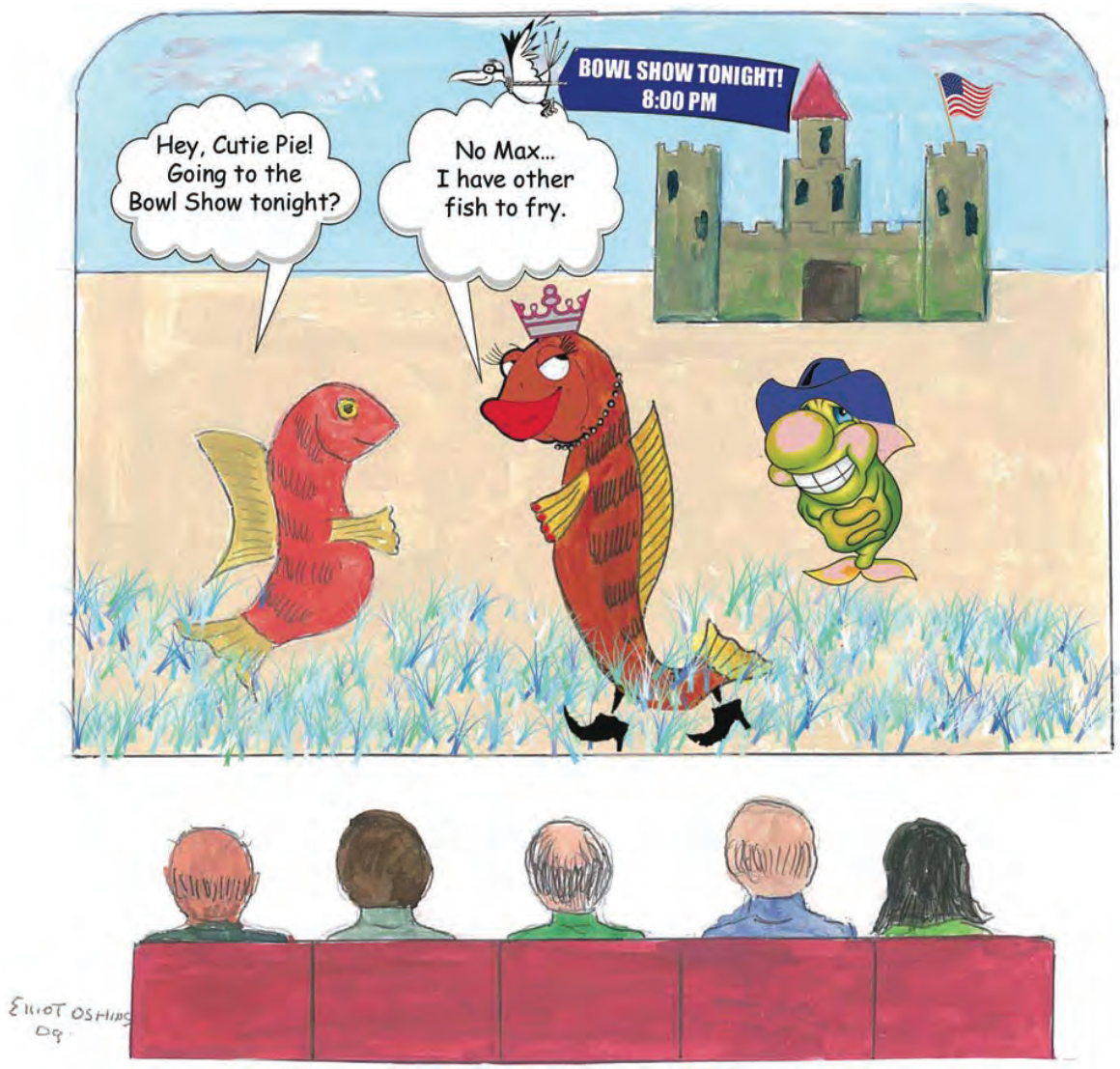
I have a confession to make, and I hope and pray the highest authority in the fish club will grant me dispensation. I do have a castle in my fifty-five gallon tank. The fish swim in and out of the castle, and use the shells for breeding.

Having a natural tank is fine. However, growing plants in your tank is not always easy, unless you're the Curtin Brothers. Rocks and plants add a great deal to the design of a fish tank, and give it a natural look. I see nothing wrong with tanks that have decorations (i.e., driftwood, sunken ships, or deep sea divers). Being an artist, anything that contributes a sense of artistic design is okay by me. And as a fish hobbyist, if my fish are happy and healthy, what more can I ask? That's all that counts. In one of my tanks I have a lighthouse with air bubbles coming out of the top. I don't think the fish mind it. I personally think they enjoy it.

At club meetings, some members will bring in fish for the Bowl Show which they think will be winners—having brilliant colors and outstanding fins. Those fish may win either a First, Second,

or Third Place Ribbon. My hat is off to them, as this represents a great deal of work. To me though, my fish are like my Piscean family. Some are better looking than others, but who am I to discriminate?

All my tanks are a stage and the fish are the actors playing parts and putting on a show for me. Some say there's no business like show business. I say there's no business like fish business. So get a good seat, sit back and relax, and enjoy the greatest show on earth.



**Bobbeh Meisseh is a Yiddish term, translating roughly as "grandmother story." Commonly pronounced "bubba myssə."—Ed.*

https://www.amazonasmagazine.com/

On Poisonous Plants,
Some in Native Water Gardens

by Micah Issitt

There are a few plants that are famously poisonous. Poison ivy, *Toxicodendron* spp, easily comes to mind for some reason, maybe having something to do with the name. The lovely little plant known as stinging nettle (*Urtica dioica*) is covered in fun little trichomes (sharp, hollow, hypodermic-like needles), and when touched these little trichomes inject a combination of chemicals into the skin, including formic acid and histamine. Contact with the plant hurts… A lot!

There are also a lot of plants that are poisonous to eat as well. One native plant that fits this bill is *Phytolacca americana*, better known as "pokeweed," an herbaceous perennial plant that puts out lovely dark purple berries that will make you super sick if you eat them. This plant's poisons are interesting in that they seem to affect only mammals. Harvest mice steer clear of the plant's delectable looking berries, but lots of native birds eagerly snatch them up. Another famously dangerous plant to ingest is poison hemlock, *Conium maculatum*, which contains coniine, an extremely deadly alkaloid that disrupts the central nervous system and can lead to failure of the respiratory system, which is not good.

While the above plants are extremely poisonous, both in terms of ingestion AND topical contact, a huge number of plant species are poisonous in one way or another. For instance, all the plants in the family Solanaceae, also known as the "nightshades," are poisonous to eat. However, the levels of poison vary from species to species and may not affect all herbivores that sample them.

There are more than 2,700 species of Solanaceae, and many of them are grown in the garden, even as crops, such a tomatoes, peppers and eggplant, which can all be safely consumed by some species. Likewise, plants in the widespread family Araceae are all poisonous thanks to calcium oxalate crystals in the tissues. Despite these toxic tissues, many species of Araceae are kept in gardens and in homes, such as the popular houseplants in the genus *Spathiphyllum*, known as the "peace lilies," which are also often used as emergent or submerged aquarium plants.

Many of the plants that are poisonous to eat also taste really bad. This is an evolutionary adaptation that aids in the survival of the plant, because it encourages learning. Imagine ancient humans entering a new area and sampling new plants while foraging for new food sources. If the plant is palatable, but covertly poisonous, a human might eat quite a bit of the plant before dying. Other humans who sample the plant might also cut the plants down, harvest them, or eat large quantities before the fatal poison sets in.

If every creature that samples the plant dies, knowledge of this mistake might also be lost with each death. Animals and plants that are poisonous therefore evolve mechanisms to let other animals know that they are poisonous, so as to avoid predation. By investing in creating unpalatable chemicals in their leaves, plants give potential predators a chance to learn and transmit knowledge.

An early human who tried to eat the leaves of a member of the Aracaceae family would likely think, "This tastes like crap." They might then tell others "Don't eat that. It tastes like crap." So humans learn to avoid the plant without having to sample the tissues, AND without having to die to spread this lesson.

A little more on the poisonous tissues of the buttercup, and what that means for horticulturists interested in utilizing Marsh Marigold or *Caltha palustris* in their water gardens. Here's the deal with *C. palustris*. The leaves and buds of the plant are technically poisonous due to the presence of a chemical called protoanemonin, otherwise known as "ranunculol," in deference to their Ranunculaceae family's name. The juices inside the plant are the key. Contact with these liquids can cause rashes and blistering of the skin. Ingesting the young leaves and buds can lead to nausea, liver failure, and even paralysis. Amazingly, this unpleasant chemical defense didn't stop humans from eating *C. palustris*.

It was quickly discovered that a quick boil gets rid of the toxic chemicals, making the soft new leaves and buds edible. There are even recipes for the safely prepared buds of the plant, which are often soaked in vinegar, pickled, or served dried with salt. Like many other poisonous plants, *C. palustris* tastes rather bitter and bad without some preparation. Cows and horses do not eat it if they find a patch growing in a pasture. However, they are sometimes accidentally fed *C. palustris* when the plant becomes chopped up or included in bales of hay. Poisoning is only a risk, typically, if the plants are still moist and haven't completely dried.

Reprinted from the Missouri Aquarium Society's publication, ***The Darter****, Volume 48 # 3, May/June, 2022.*

Fishy Friends' Photos

by Greater City Aquarium Society Fishy Friends

Below are photo submissions to our "Fishy Friends" Facebook group. I've left the subjects unnamed, but not the photographer. If you see a shot you like, and want more info, ask the photographer about it! I'm sure he or she will be delighted to tell you!

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THE CAMBODIAN STING

A series by the Undergravel Reporter

In spite of popular demand to the contrary, this humor and information column continues. As usual, it does NOT necessarily represent the opinions of the Editor, or of the Greater City Aquarium Society.

The world's largest recorded freshwater fish, a giant stingray, has been caught in the Mekong River in Cambodia, according to scientists from the Southeast Asian nation and the United States.

The stingray was snagged by a local fisherman south of Stung Treng in northeastern Cambodia. The fisherman alerted a nearby team of scientists from the Wonders of the Mekong project, which has publicized its conservation work in communities along the river.

Freshwater fish are defined as those that spend their entire lives in freshwater, as opposed to giant marine species such as bluefin tuna and marlin, or fish that migrate between fresh and saltwater like the huge beluga sturgeon.

"The fact that the fish can still get this big is a hopeful sign for the Mekong River," Wonders of the Mekong leader Zeb Hogan said in an online interview, noting that the waterway faces many environmental challenges. About 70% of

Cambodian and American scientists and researchers, along with Fisheries Administration officials, prepare to release a giant freshwater stingray. ***Photo provided by Wonders of the Mekong***

The stingray, captured on June 13, 2022, measured almost 13 feet from snout to tail, and weighed slightly under 660 pounds.

giant freshwater fish globally are threatened with extinction, including all of the Mekong species.

References:

https://www.oregonlive.com/environment/2022/06/largest-ever-freshwater-fish-caught-13-feet-long-and-more-than-600-pounds.html

Fin Fun

Auction Action

At an aquarium society's auction, you would expect to see fish. But, you could also find things your fish can use. See if you can find all the listed objects in the puzzle below.

P	A	G	R	A	V	E	L	D	R	I	F	T	W	O	O	D	H
M	I	D	I	D	E	C	H	L	O	R	I	N	A	T	O	R	F
E	R	W	L	Z	D	C	A	R	A	L	K	S	P	D	F	F	O
D	P	D	K	Q	H	E	R	T	M	Q	Y	L	H	L	A	C	O
I	U	L	I	G	H	T	S	T	R	I	P	Z	O	E	A	H	D
C	M	L	I	G	H	T	B	U	L	B	J	V	S	T	H	N	Q
I	P	O	R	N	A	M	E	N	T	C	P	U	E	N	E	T	T
N	X	C	P	F	I	L	T	E	R	S	F	N	H	B	A	D	B
E	V	H	O	O	D	Q	I	K	W	T	A	N	K	O	T	X	G
H	N	B	E	C	P	J	U	C	R	B	F	E	R	O	E	S	O
J	D	B	P	U	U	J	T	Y	F	S	V	L	N	K	R	G	F
G	B	L	K	C	C	A	V	E	A	B	S	T	X	Y	P	W	J

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DRIFTWOOD
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FOOD
GRAVEL
HEATER
HOOD
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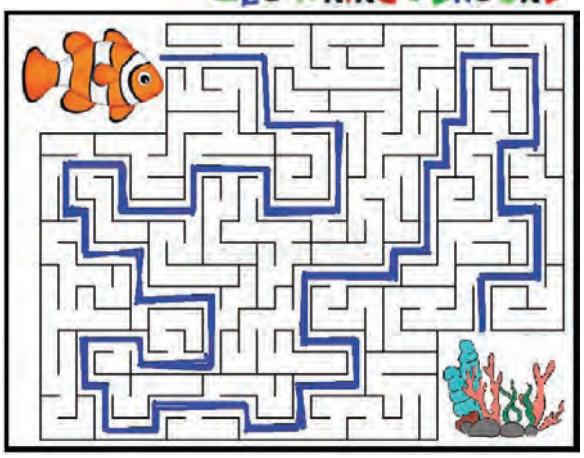
NET
ORNAMENT
PLANT
TANK

Solution to our last puzzle: Clowning Around



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