

modern AQUARIUM



April 2021
volume XXVIII
number 2

Greater City Aquarium Society - New York

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Series III Vol. XXVIII, No. 2 April, 2021

ON THE COVER

Our cover photo this month features a group of cardinal tetras (*Paracheirodon axelrodi*), arguably the most popular of the small tetras in the aquarium hobby. Like many of our recent cover photos, this one was submitted by one of our GCAS Facebook Fishy Friends!

Photo by Victor Huang

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From the Editor

by Dan Radebaugh

What a difference a month can make! In March we were still wandering in the Covid-19 wilderness, not knowing if or when we would finally get some relief. This month we're perhaps seeing a light at the end of the tunnel! Sometimes of course that light turns out to be the headlight of an approaching locomotive, so we shouldn't get too cocky. Nevertheless, quite a few of us have by now received one of the various vaccinations as the available supply continues to increase. So who knows? Maybe a little optimism isn't a bad thing.

This month's **Modern Aquarium** is a few pages smaller than last month's, but it gets around! On page 9 Steve Sica shows us yet another of his creative fish stands. Did you know that Sir Winston Churchill was a noted aquarist? Neither did I! Take a look at Joe Ferdenzi's article on page 11! Joe Graffagnino tells us about his experience breeding *Gymnogeophagus terrapurpurea*, a member of the *Gymnogeophagus rhabdotus* group of small cichlids hailing from the eastern coastal area of the Uruguay River in Argentina and Uruguay.

We have two exchange articles this month, one by Joan Snider (Tropical Fish Club of Burlington) on raising Royal Farlowella fry, and the other by Dr. Glen Roberts from the Kitchener-Waterloo Aquarium



Society, from a series of articles he wrote on "Tall Tales and Myths" related to fishes and their habitats.

Each year we publish our current list of prohibited species. This is pretty straightforward, and is for the club's and our members' protection, to help us stay on the right side of current regulations. See page 18. I'll also recommend to your attention our section (pages 20 & 21) on GCAS member discounts at fish shops in our area. At least one establishment that was listed here seems now to be defunct. You might want to check on the shops near you to see how they're doing. This has been a tough couple of years. Please let me know if there are any others you know of who are no longer with us.

Following our Facebook Fishy Friends' photo on page 22, the issue ends with the familiar but ever-changing Undergravel Reporter and Fin Fun. Enjoy!



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](https://www.amazon.com)





GCAS Programs

2021

While because of the Covid19 situation we cannot yet predict when we will be able to resume our normal meeting schedule at the Queens Botanical Garden, we do hope to be able to resume in-person meetings sometime this year. We will post updates to this schedule as we are able to do so. Meanwhile, all these meetings will be on Zoom. We'll be sending links. Hope to see you all soon!

March 3	Joseph Ferdenzi <i>Lake Tanganyika Cichlids (via Zoom)</i>
April 7	Dr. Richard Pierce <i>A Second Look at Tetras</i>
May 5	Joe Graffagnino <i>Building A Fish Room</i>
June 2	TBA <i>TBA</i>
July 7	TBA <i>TBA</i>
August 4	TBA <i>TBA</i>
September 1	TBA <i>TBA</i>
October 6	TBA <i>TBA</i>
November 3	TBA
December 1	TBA

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 2021 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. 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 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

We are one month into our fiscal year, and I just had my second Moderna shot to protect me from the bad little bug. Let's hope that it doesn't mutate too fast for our vaccines to keep up.

REMEMBER! We are one year away from our 100th anniversary! As most of you will know by now, I was somehow not appointed as Trump's Vice President in exile. Oh, well...

To say that 2020 was a challenging year would be a massive understatement. We all faced the hazards that accompanied Covid-19: fear, anxiety, quarantine, illness, and in some cases loss of life. To all who suffered illness or grievous losses, we offer our deepest condolences. Thank you for your continued support of our club. We're still going to be in ZOOM mode for a while, but we hope that as the vaccination rate goes up we will once again be able to meet in person. Though I liked the ZOOM meeting a lot more than I thought I would!

Until that time we look forward, and we will keep you informed as well as we are able. At least we have been able to distribute **Modern Aquarium** each month even if in digital mode, and we look forward to the day when we once again receive it in our hands!

See you soon!?

Horst



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Read A Cookie, Write an Article

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.

While I have seen many articles to encourage people to write for their society's publication, I think I found a different approach. Recently, at the end of a meal at my favorite Chinese restaurant, I received my usual fortune cookies and suddenly realized (possibly with the aid of several glasses of rice wine consumed earlier), that through the years many of the fortunes I found in those cookies held wisdom for the novice writer. Here are some of those fortunes, with my comments on how they apply to writing articles:

A journey of a thousand miles begins with a single step

This fortune reminds us that every project has to start somewhere. The hardest part of writing an article is just getting started. Sometimes, I find it easier to start in the middle, with what I know I want to say. Once I have that down on paper, I work on the beginning (introducing it) and the end (a conclusion and bringing it all together). But, until you put something down on paper to start, you'll never get that article finished.

Share your happiness with others today and Please all, and you will please none

These two fortunes point out that the best articles are those that reflect your personal interests. When you write about what interests you, you are more likely to write an article that is interesting. Do not worry whether everyone, or even most of the people who will read the article, share the same interest as you. An article written by someone who really enjoys the subject of the article will be enjoyable to read, even by those who might not otherwise share your interests.

Words should be weighed, not counted and What orators lack in depth they make up in length

These fortunes remind us it is the quality, not the quantity of words that counts. It is actually harder to write a good short article than a good long one. To write a short article, you must communicate effectively and efficiently. Just because your article is not over a thousand words does not mean it is not as good as an article twice as long. In writing, size, by itself, really does NOT matter.

Eschew Obfuscation and Help stamp out and abolish redundancy

The first fortune is a humorous way to say: "avoid confusing and obscure language." The second fortune is a humorous way of reminding us to "keep it simple" ("stamp out" and "abolish" mean the same thing, so using both together is "redundant"). As another example, a sentence such as: "This is about the care and maintenance of fancy guppies" is redundant, since "care" and "maintenance" mean essentially the same thing in that context.

He who has imagination without learning has wings but no feet

A good idea for an article is just the start. As the above fortune points out, most articles need to have some fact. That may mean interviewing an expert (and don't forget that there are experts in your own society) or consulting magazines or reference books. Remember to give credit to any and all sources you use.

Common sense is very uncommon

Just because you know something very well does not mean everyone else does. We often make the mistake of thinking that an article on a certain fish or plant would be of no interest to anyone else, because "everyone else knows all about it." That is usually not true.

Your talents will be recognized and suitably rewarded

This is to remind us that articles in our publication are eligible for awards in both the FAAS and NEC publication award competitions.

This is a GENUINE Fortune! Don't be fooled by cheap imitations

Keep in mind that humor and personal experiences, if used sparingly and tastefully, can often enhance and enliven an article.



In Memoriam

Muhammad Khan 1937-2020

by Leonard Ramroop



Muhammad Khan, known to many of us as Mr. Khan passed away on December 31, 2020. Mr. Khan was born in Trinidad & Tobago (West Indies) and was an avid fishkeeper and exporter. He migrated to

New York in the early 1970s and settled in the Richmond Hill section of New York.

A few years after his arrival he established a tropical fish import/export company, Muskhan Tropical Fish, on Liberty Avenue in Queens. He welcomed many club members from Greater City to his fish room, and generously donated many fish to our club.

Imports came from all over the world: Guyana, South America, Nigeria, the Congo and the Far East, but his primary “bread and butter fish” came from his native homeland.

The Trinidad Guppy, the Trinidad Pleco and the green Trinidad Cory that you saw in the pet shops probably came from his imports. He was in the business for over 50 years and helped countless people with his generosity. He was a kind, humble and decent man who was part of my extended family. I will always treasure the times I spent with him.

Rest in peace, Mr. Khan!

Leonard



Gymnogeophagus terrapurpura

by Joseph Graffagnino



This beautiful and peaceful mini-geophagus is a member of the *Gymnogeophagus rhabdotus* group from the eastern coastal area of the lower Uruguay River basin in Argentina and Uruguay. Discovered in 2016, this species, as with others in its group, enjoys a pH of 7.0 to 7.5 and a water temperature of 68–77 degrees Fahrenheit. It can grow to 4 ¾ inches.

I picked up a group of nine young fish at a North Jersey Aquarium Society event. Even in their stressed condition I could see the beautiful colors in their finnage. I placed the group in a 20-gallon long aquarium with plenty of caves and cover. The group got along with no problems. They were social, and although they bumped and prodded each other continuously there was never a ripped fin. Six months passed, and one pair of fish tried to take over a small flowerpot lying on its side. While the female tried to clean the walls of the flowerpot the male attempted to keep the other seven away from their new home. It didn't work.

Late one evening I entered the fishroom with a large net and a flashlight. I had left the aquarium top open so that I wouldn't make noise. With a red towel over the flashlight I was able to see into the *Gymnogeophagus terrapurpura* tank, and the red light did not spook the fish. As I expected, I found the pair sleeping in their flowerpot. I slowly eased the fish net into the water and inched it toward the pair. When it

was close enough, I scooped the net and caught the pair of fish (and the flowerpot). I quickly moved the net and its contents into a 10-gallon tank that I had prepared earlier. Now there were no other fish to bother them. I couldn't wait to see what they would do.

I didn't have to wait long. Two days later they spawned in the base of the flowerpot. In the next couple of days I saw that many of the eggs were not fertile. Within two more days the eggs disappeared. Eleven days later they spawned again, but this time there was twice the amount of eggs as from the original spawn. Three days later the eggs hatched. The pH was 7.0 with a temperature of 81 degrees Fahrenheit. The tiny wrigglers covered the bottom of the flowerpot. Three days after that they were free swimming. They were too tiny for baby brine shrimp, so I fed them frozen rotifers and tiny (50-100 micron) Golden Pearls, and with 10% water changes weekly they quickly grew. I was able to keep them with their parents, who were model protectors.

These fish were young, and 3 inches long. Sexing the pair was easy because the male was slightly larger and more colorful, especially in breeding colors, and his dorsal and tail fins had extensions, whereas those of the female didn't. *Gymnogeophagus terrapurpura* is a pretty, interesting and hardy species, and would be a great addition to any aquarium. Under blue light in a planted aquarium they look spectacular!



References:

ResearchGate.net – First record of *Gymnogeophagus terrapurpura* (Teleostek: Cichliformes) from Argentina, April 2017 Authors: Ignacio Garcia, Guillermo Teran, Ariel Puentes and Stefan Koerber.
Fishbase.de - *Gymnogeophagus rhabdotus*



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My “Fern-Aquaria”

Story and Photos by Stephen Sica

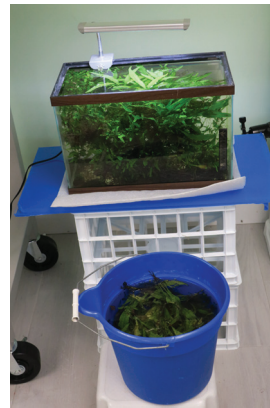
Do you ever notice how lovely your aquarium looks when you add a few beautiful live plants? You do your best to arrange them artistically. You stand back to admire your accomplishment and think to yourself “That’s not bad!” Then, after a few months, or maybe less, those same plants, if they are still alive, seem to have melted into the miniature seascape—or maybe worse, they are coated with some algae. Mine are usually covered with a lot of algae. Where did I/you go wrong?

Now I know that many of you hardly ever, or even never have these issues, but when it comes to fishkeeping and all of its related aspects, I am surely average on even a good day. I usually ask myself the following questions: did I change enough water? Did I overfeed the fish? Is there too much light? I usually settle on the third question, but I really think that my fish may be overfed. As a self-described amateur naturalist, it bothers me to see animals go hungry. For quite a while now it has also bothered me to see people go hungry, but such may be the new order in the 2021 edition of planet Earth.

Anyway, a few months ago I decided to dismantle my twenty gallon tall aquarium. It was coated with algae. As I drained the water to search for my fish, I discovered that a large amount of new Java fern and *Anubias* plants had been growing in it. I was both amazed and pleased. I moved the fish to the basement and trimmed all the plants down to the tiniest of shoots. I consider myself to be an average plant keeper, but now I had abundance. I set up a 5-½ gallon tank next to my twenty gallon long clown loach tank in the basement. I attached a Finnex LED clip-on light with a flexible gooseneck. Since this small tank is not too heavy, I stacked two plastic crates and put a piece of half inch acrylic sheet plastic on top of the



When my 20 gallon aquarium with fish became a plant jungle, I set up a standard 5 & 1/2 gallon glass tank in the basement and connected a small gooseneck LED light above it to work from the timer of another 20 gallon long tank..



When friend and fellow GCAS member Herb Walgren offered a very large number of Java ferns that he prolifically grows, I accepted his generous offer since I now had a plants only aquarium. He gave me more than I expected so I put plants in a 12 quart plastic bucket elevated on a step stool near the LED light.

crates to support the tank. I immediately poured my excess plants into the tank.

Around this time, fellow GCAS member Herb Walgren and his family came over for a visit. Herb presented me with a veritable treasure-trove of Java fern plants. I put several in my three aquariums, and the remaining plants found a home in my new plants’ only tank. Being a rhizome plant—that is—having roots that should not be embedded in substrate, it was quite easy to “plant” these plants. I just dropped them into the water! Everyone knows that this is the joy of Java fern and *Anubias* plants, because you don’t need two or three inches of substrate and a steady hand or other instrument to embed roots or shoots into the bottom. When I do this with root plants, a few shoots always float away with leaves falling off as I attempt to grab them. Now, whenever I desire to replace an old plant or just add a new one, I have a repository from which to pick and choose. Of course, the plant is always a Java fern or small *Anubias*.



A closer view of my plant aquarium and stand.

My plant collection grew so much that I returned to my backyard garage and dug out an old ten gallon tank to save still more plants. Luckily, many years ago I had purchased a lightweight plastic stand that was



I started re-planting my two basement fish aquariums and a new custom-made small acrylic fish tank in my den with all of these new plants. Thinking big, I went back to the garage to fetch a 10 gallon tank and set it up to be my new "fern-aquaria." This enabled me to forego the bucket and dismantle the 5 & 1/2 gallon fern tank. Now I have plenty of room if Herb Walgren gives me any more plants. The tank is supported by my portable plastic stand. (After I wrote this story, Herb did indeed give me a new batch of Java ferns. Thanks Herb!)

made specifically to support the maximum weight of a standard ten gallon tank. I use it whenever I get the urge to set up a nano aquarium. I had an eight gallon tank with small ember tetras on this stand a few years ago. It comes in very handy. I purchased it via internet from the now defunct Doctors Foster and Smith or its predecessor pet supply company in Wisconsin about fifteen years ago. It can be disassembled into three or four parts. I remember that I paid thirty dollars. I thought it was a lot of money at the time.

As I started using up the plants, I dismantled the 5-1/2 gallon tank and decided to keep the ten as my current "fern-aquarium." I relocated the LED fixture to the larger tank and was ready to go. Now, if Donna sees its light on during the evening whenever she has an occasion to go down to the basement, she invariably asks, "Are there fish in there?" I customarily respond, "No." Now, if only she'd forget to remind me about my bad habits.





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Legendary Aquarists: Winston Churchill

by Joseph Ferdenzi

Some very distinguished people have been part of our hobby. By that I do not mean that they had an aquarium. Owning an aquarium does not make one an aquarist any more than having a potted plant in one's home makes one a botanist. No—I am talking about famous people who had multiple aquariums, collected various species and tried breeding some of them, and corresponded with or joined other aquarists in local aquarium societies. I have written about one such person before—S. S. Van Dine (the pen name of Willard Huntington Wright), who was one of America's best-selling authors in the 1930s. Here, I write about someone even more famous—Winston Churchill.

For those of you who would like a quick history refresher I will give a brief introduction. Winston Churchill was born in 1874, the son of a



Winston Churchill, circa 1940

British lord and his American wife. Though born into a privileged class, Churchill served in the British army and fought in a number of wars with evident gallantry. During those wars he also became a war correspondent. Eventually he entered politics. When World War II raged he became England's Prime Minister. As such, he was the leader of one of the major Allied countries (the others being the U.S.A. and the Soviet Union) that defeated the Axis powers.

His speeches are legendary to this day, and did much to inspire his people even

in the darkest days of the war. He is universally regarded as one of the greatest statesmen of the 20th century.

After the war was over he found time to be an avid aquarist. At his principal home he kept a number of aquariums. He was particularly fond of various livebearers, such as guppies, mollies, and platies. He also kept a number of tetras, and tried his hand at breeding *Betta splendens*. He did not keep many cichlids, though he did have angelfish. For some peculiar reason he was reported to not be fond of catfish, and did not even keep any of the popular *Corydoras* genus.

Churchill also corresponded with various other aquarists, both in England and abroad (particularly in the United States). While he sometimes received some particularly desired fish from these fellow aquarists, in the main he rather sought advice from them.

Churchill was apparently dedicated to taking good care of his fish. One of the people he corresponded with during this period (the 1950s) was Alan Fletcher, who would later become a friend of mine. At the time of their correspondence Alan was an editor at **The Aquarium** magazine—the world renowned publication started in 1932 by the legendary William T. Innes. continues →



Churchill looking at fish in a show

March, 1965

EDITORIALLY . . .

The world in general, and Great Britain in particular has lost one of its most outstanding people: Sir Winston Churchill. We all know of this wonderful man's many activities, but most of us are not aware of the fact that he was a fish hobbyist for many years. He was greatly pressed for time to visit the many aquarium exhibitions in England, but always found a few minutes to look at some fish he particularly liked. There is an account of one time when he watched two male bettas in a tank furiously trying to push through a dividing glass to tear each other to bits. Somebody asked him if he liked fighting fish, to which his answer was: "No more than other fish, but I do admire their guts!" Sir Winston Churchill was an honorary member in many aquarium societies in Great Britain, and it was known that he was greatly interested in the cold-water species. He began his fish-keeping at an early age, and there are numerous goldfish pools scattered about his birthplace, Blenheim Palace.

Many great people find it very relaxing to their jangled nerves to take a short rest in front of a fish tank and watch the fish as they go about their little tasks. Many a person with a problem on his mind has studied a tankful of fish and been surprised when he got up to have everything fall into place! I like to imagine Sir Winston Churchill sitting before a fish tank with all the complex problems he had during World War II, problems that would have broken the heart of many lesser persons, smoking his big cigar and murmuring his belief that there would always be an England.

William Vorderwinkler

The above was written by the Editor of **Tropical Fish Hobbyist** magazine, William Vorderwinkler, for the March 1965 issue of **TFH**.

Unfortunately, Alan lost this correspondence, but he was able to recall that much of it had to do with goldfish. As it happened, both before the war and after, Churchill maintained goldfish ponds. So as you can see, Churchill was an avid aquarist in many ways.

When Churchill became too old to keep his tropical fish in the way he was accustomed, he donated the fish to a public zoo. From this we can surmise that he was pretty good at keeping his fish

alive and in prime condition. It is known that he sought advice on fish food, and was particularly keen to give his fish the best diet possible.

Knowing that Winston Churchill was an aquarist inspires me. He was a great world leader who successfully navigated his country through the horror of World War II. Yet he did not consider aquarium keeping to be unworthy of his time and effort. I thank him for the encouragement.



Additional reading:

Brendon, Piers. **Churchill's Bestiary — His Life Through Animals** (London, Michael O'Mara Books, Ltd. 2018)
Ferdenzi, Joseph. "The Rest of the Story: **The Dragon Murder Case**," **Modern Aquarium** (February 1998).
Ferdenzi, Joseph. "The Rest of the Story: **The Dragon Murder Case Revisited**," **Modern Aquarium** (May 1999).
Ferdenzi, Joseph. "Dr. William T. Innes: A Paragon of the Aquarium Hobby," **Modern Aquarium** (December 2007).
Fletcher, Alan. "When The Last Aquarium Goes," **Modern Aquarium** (October, 2019).

Tonight's Speaker

Richard Pierce: A Second Look at Tetras

Richard Pierce has been keeping fish for as long as he can remember. His interest in all things aquatic led him to study Marine Biology, culminating with a Ph.D. in Biological Oceanography from the University of Rhode Island. He has worked in two public aquaria and in two retail aquarium stores.

He currently maintains roughly 1,000 gallons in 100 aquaria in his fish room. Since his largest aquarium is 65 gallons, most of his fish are small. Although he keeps and breeds all kinds of fish, killifish, wild-type livebearers and characins are of particular interest.

In addition to fishkeeping, Richard enjoys photography, especially photographing fish and macro photography. He has won awards in both the American Killifish Association and NEC photo contests, and now chairs the annual NEC photo contest. He has spoken at many aquarium societies throughout the country and enjoys meeting other aquarists and visiting their fish rooms.

Richard has been an active member of the Tropical Fish Society of Rhode Island since 2003 and is currently their President and Breeder's Award Program Chair. He is also active in the American Killifish Association, having served two terms on the Board of Directors, including three years as Chairman. He was an editor of the Journal of the American Killifish Association from 2010 to 2018. He is also



very involved in the Northeast Council of Aquarium Societies where he has served as vice-president, Breeders Participation Program Chair, and has recently retired from the position of President in 2018. He currently serves as the President of the Southern New England Killifish Association (SNEKA).



Tall Tales & Myths

The Hippocampus

By Dr. Glen Roberts

No, I'm not talking about that little part of your brain that processes feelings and reactions.

I'm talking about the creature from Greek mythology. The seahorse. Again, not the seahorse that we know and love and often have in our marine aquariums. This mythical creature has the upper body of a horse and the lower body of a fish. Sometimes they are even depicted with wings. In Greek, hippo means horse and campus means sea monster. Interestingly however, the addition of a fish tail to the Hippocampus was made by poets and artists who came much later than the origin of the Greek myth. The original Hippocampus was much more horse-like, with hooves.



Poseidon, the god of horses, earthquakes and the sea is often shown being drawn by hippocampi in a sea chariot. Ancient people were familiar with the actual sea dwelling seahorse, but they believed that they were just the juvenile form of the mythical Hippocampus. Hippocampi are regularly seen in statues, the most famous being the Trevi Fountain in Rome depicting a Hippocampus and Poseidon.

The froth on the ocean was thought to be caused by the pounding of the hooves of the hippocampus as they bounded around under the sea. They were very secretive and gentle creatures that never harmed other creatures, feeding only on plants at the bottom of the ocean.

So next time you're at the sea side and notice the froth on the beach, keep your eyes open for a playful Hippocampus.



Raising Royal Farlowella Fry

by Joan Snider



Over my many years of fish keeping, I have kept a huge variety of fish. Keeping fish that I buy, put in my tank and rarely see again has been a consistent occurrence through it all. Therefore, keeping secretive fish such as Royal Farlowellas was a no brainer.

Imagine my delighted surprise, then, upon returning home from a weeklong trip in December to find my usually shy male guarding a huge clutch of eggs on the filter overflow. I had no way of knowing when the eggs were laid, but they were very large and the fry were eyed-up and apparent inside. I knew I had to move them immediately since they were in my 220-gallon tank full of fish eager for a free, fresh meal. Thinking back on it now, I believe the eggs were saved by the fact that a pair of angels were guarding eggs above them and a pair of kribensis were guarding eggs in a cave below them. Those pairs of parents were very aggressive in keeping that side of the aquarium free from predators.

“The challenge seemed to be getting the fry to eat.”

The eggs were very tough and hard to remove from the overflow that they were laid on. I was able to scrape them off and my husband caught them in a net. The process of removing them prompted or forced some to hatch. All hatched within a few days of moving. I estimate that I had roughly 70 eggs and I believe it was pretty much a 100% hatch rate.

I had a few concerns about how to best go about successfully raising the fry based on accounts from others on the difficulties of feeding them. I consulted with a few people in the industry and read accounts online to help me figure out my next steps while the fry still had their yolk sacs. David Banks, [Ted Judy](#) and [Bicoaquatix](#) all offered helpful advice.

My challenge was to provide the right combination of environment and food. The fry needed limited space to keep food accessible, decent water flow and ample appropriate food. The trick was to provide all those things in a container that was easily maintained and didn't pollute quickly. I originally divided the fry into a few different containers to see what worked best, and I didn't want all of the fry in the same container if things went south.

I put some in a Marina external breeding box hanging on my 26-gallon bow front aquarium that houses guppies and Ancistrus fry. The water flowed through that box fairly slowly. I also put some in an internal breeding box inside that same aquarium. That breeding box had more water exchange as it had mesh panels for the sides.

The challenge seemed to be getting the fry to eat, and eat appropriate food. Royal Farlowella fry naturally live in an environment in which food is delivered to them by way of the water current. This



Joan Snider has been keeping freshwater and marine animals for most of her life, and especially enjoys researching and solving technical and husbandry

challenges. A avid Dyer, Joan is as well-known in the plumbing departments of local hardware stores as she is in LFS throughout New England. She has a special fondness for unusual dwarf cichlids, plecos, catfishes and doing water changes.



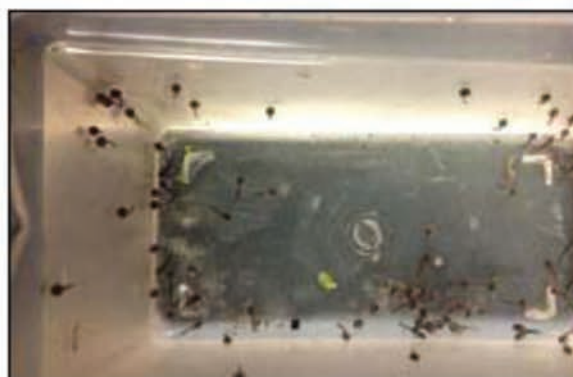
Male Royal Farlowella guarding eggs on filter overflow.

Reprinted from the NEC Newsletter, March 2020. Originally published in the March, 2016 issue of Tropical Fish Club of Burlington (TECB)'s *In Depth*

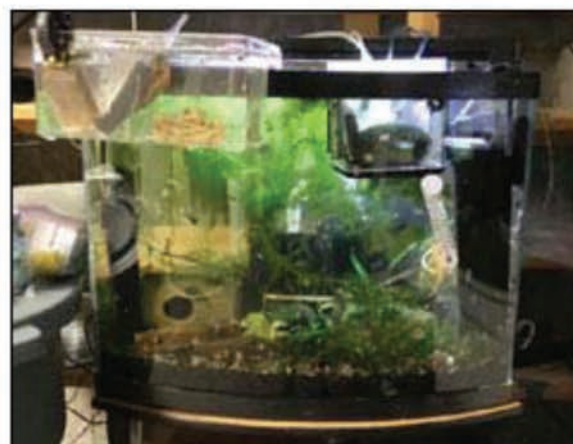
meant that they don't immediately or actively seek food. I needed to replicate a flowing stream with food continually suspended. I added air stones to their containers to keep the water moving constantly. I ground a large variety of foods into a powder and used that mixture in the hope that it would remain suspended long enough for them to feed on. A mortar and pestle is a very useful tool to have in the fish room! Here's a list of some of the foods I used:

- Repashy (Ted's Most Excellent, Powrr-Up and Soilant Green) Ted suggested that I use this as a powder first, not made into the gel. That was great advice. I started using it as a gel as they grew while continuing its use as a powder.
- Super Blackworm Baby Mix from [Aquatic Foods](#) (Andrew Soh's Pro Gro, spinach, PE mysis, shrimp, plankton, Tetra Color Bits, natural astaxanthin, salmon fish meal)
- Golden Pearls (a "non-sinking" particle diet that remains suspended in water, widely used to replace baby brine shrimp)
- Blackworms (powdered dry)
- Spirulina
- Daphnia (powdered dry)
- Krill
- HBH Baby Bites
- Sera Micron
- Brine Shrimp (powdered and frozen BBS)
- Earthworm Sticks and Flakes
- Chlorella algae
- Liquifry (both liquid and powdered)
- Plecoccaine (a favorite)
- New Era's Plec Pellets
- Xtreme Aquatic Foods Cat Scrapers (also a favorite)
- Frozen Bloodworms and Brine Shrimp (shaved)
- Organic zucchini, yellow squash and butternut squash, green beans
- Doc's Eco Egg Brew (this is a liquid suspension, not part of the powder mix)
- Paradigm fish food

I also kept a variety of items in the breeder boxes to provide alternate grazing surfaces. I used Cholla wood, Catappa leaves, Poly Filters and algae-covered



Approximately 70 day-old fry in a dip bucket, ready to move to fry-rearing containers.



To reduce risk, the fry were separated into an external Marina breeder box and an internal box with screen sides. Note the heavy aeration in both.



Fry grew quickly in the Marina breeder box with plenty of aeration and a variety of grazing surfaces.

cichlid stones. My hope was that food would settle on these surfaces and the fry would attach there to feed. This proved to be the case. As they matured, they spent less time on the sides of their container and more on the wood, leaves, etc. I continued to give them the powdered mix, but I added whole pellets and gelled Repashy for them to graze on as they grow.

Initially, I experimented with making up Repashy food and having it gel onto the sides of a ceramic plant pot to see if I could provide them with food this way, since they were intent on staying vertically attached to the sides of the containers. That was a failure when the fry were very small, but worked as they matured.

I kept the fry in the two breeder boxes for the first couple of weeks. I was very diligent about water changes, especially on the external box. I did 100% water changes 1 to 2 times daily, siphoning out leftover food and waste and flushing the water out to clean it completely. I've read differing accounts of the correct water temperature. The temperature in the tank that the eggs were laid in was 75 degrees. I upped the temperature to 82° in the grow outs, but I don't think I'd do that again. I was consistently losing a few fry a day for the first couple of weeks.

"They are thriving in this system."

At around two weeks, the internal breeder box side screen popped out unexpectedly during a water change, releasing the fry into the bow front tank. At this point, I decided to leave some in the bow front with the Ancistrus and guppy fry and move some into a Fluval Spec V. The Spec V was set up with the Cholla wood, driftwood, algae-covered cichlid stone, etc. I was curious to see how they fared in the different living situations and how it might affect their growth rate and survival.

Ultimately, the Spec V was difficult to keep clean and some fry were able to get into the filter compartment. I decided that the Spec V was not a good option. I felt that the fry I left in the 26-gallon bow front were not growing as well as the ones in the original external breeder box either, possibly because of difference in food concentration. The Marina breeder box was really easy to keep clean while providing a dense concentration of food. So, of those initial options, I think it provided the best conditions for growth. The mortality rate decreased significantly after the first week or so and I stopped losing fry around 3 weeks.

When the fry were roughly 5 weeks old, I put together a grow-out system to house all the fry and any future eggs and fry (see DIY Tips, Tricks & Treats on page 15). They are thriving in this system and I will keep them there until they are ready to sell. It allows me to control the water level and current, and provides a large volume of water so the food concentration doesn't quickly pollute the water.

To increase the natural grazing surfaces, I have also added more botanical variety from Tannin Aquatics, which the fry really utilize. They put together an assortment of leaves, pods, wood, and more for me with the fry in mind. (See review of Tannin on page 19.)

The fry have been growing quite fast, but there is significant difference in the largest versus the smallest. Maybe a gender difference? I can't really say that the container/food concentration brought about this difference as there ended up being large and small in all containers. The Marina external breeder box did produce the largest fry, though. At six weeks, the fry size ranged from 1" to 2-1/2" and their growth rate slowed down considerably.

The Royal Parlowellas laid eggs again a few weeks ago, but there were only six eggs, possibly due to predation. I'm hoping they lay a large clutch again soon; I'll be ready for them.





Greater City Aquarium Society

Prohibited Species List

This is a list of species prohibited from being sold, given, or traded at any Greater City Aquarium Society (GCAS) auction. These species are restricted by NYS or federally, require special permits, and/or have complicated trade requirements. GCAS will remove any of the listed items, and ethically dispose of, or turn over such items to the proper authorities. Common names may differ, so please check the scientific names of any species you sell.

Prohibited Aquatic/Bog/Marsh Plants:

Golden Bamboo (*Phyllostachys aurea*)
Yellow Groove Bamboo (*Phyllostachys aureosulcata*)
Common Reed Grass (*Phragmites australis*)
Marsh Dew flower (*Murdannia keisak*)
Purple Loosetrife (*Lythrum salcra*)
Reed Manna Grass (*Glyceria maxima*)
Smooth Buckthorn (*Frangula alnus/Rhamnus frangula*)
Yellow Iris/Yellow flag iris (*Iris pseudacorus*)
Anacharis/Elodea/Brazilian water weed (*Egeria densa*)
Eurasian minfoil (*Myriophyllum spicatum*)
Broadleafwater minfoil (*Myriophyllum heterophyllum X M.laxum*)
Cabomba (*Cabomba caroliniana*)—any similar species we cannot identify will be removed from the auction.
Floating Primrose Willow (*Ludwigia peploides*)
Frogbit (*Hydrocharis morsus-ranae*)
Hydrilla/water thyme (*Hydrilla verticillata*)
Parrot Feather (*Myriophyllum aquaticum*)
Uruguayan Primrose Willow (*Ludwigia hexapetala/grandiflora*)
Water Chestnut (*Trapa natans*)
Yellow Floating Heart (*Nymphoides peltata*)
Slender false brome (*Brachypodium sylvaticum*)

Prohibited Aquatic Inverts:

Asian Clam (*Corbicula fluminea*)
Zebra Mussel (*Dreissena polymorpha*)
Quagga Mussel (*Dreissena bugensis*)
Asian Sea Squirt (*Styela plicata*)
Asian Shore Crab (*Hemigrapsus sanguineus*)
Bloody Red Mysis Shrimp (*Hemimysis anomala*)
Carpet Tunicate (*Didemnum spp.*)
Chinese Mitten Crab (*Eriocheir sinensis*)
Faucet Snail (*Bithynia tentaculata*)

Chinese Mystery Snail (*Cipangopaludina chinensis malleata*)
Japanese Mystery Snail (*Bellamya japonica*)
New Zealand Mud Snail (*Potamopyrgus antipodarum*)
Rusty Crayfish (*Orconectes rutilus*)
Suminoe Oyster (*Crassostrea ariakensis*)
Veined Rapa Whelk (*Rapana venosa*)
All freshwater mussels or clams native to the USA

Prohibited Fish Species:

Bighead Carp (*Hypophthalmichthys nobilis*)
Black Carp (*Mylopharyngodon piceus*)
Large-scale Silver Carp (*Hypophthalmichthys harmandi*)
Silver Carp (*Hypophthalmichthys molitrix*)
Round Goby (*Neogobius melanostomus*)
Tubenose Goby (*Proterorhinus seilunaris/marmoratus*)
Eastern Mosquitofish (*Gambusia holbrooki*)
Western Mosquitofish (*Gambusia affinis*)
Dojo Loach/Weather Loach/Gold/Marbled Loach (*Misgurnus anguillicaudatus*)
Sea Lamprey (*Petomyzon marinus*)
Tench (*Tinca tinca*)
Walking Catfish (*Clarias batrachus*)
Snakehead (All species described and undescribed in the genus *Channa*)
All species of Piranha
Asian Arowana (*Scleropages formosus/inscriptus*)
Zander (*Sander/Stizostedion lucioperca*)

Prohibited Reptiles/Amphibians:

Alligators/Crocodilians
Monitor lizards
Newts/Salamanders

Other Rules:

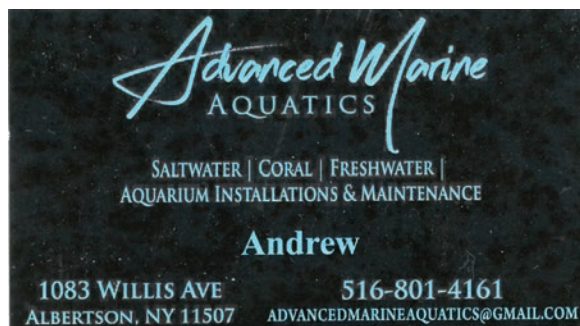
Any species native to the State of New York is Prohibited.
Any Game species defined by DEC or NYS is prohibited.
Any species protected by the U.S. Endangered Species Act is prohibited.
Any species not listed that is prohibited federally.
Any species that violate the Lacey Act is prohibited.
Any species imported or transported illegally is prohibited.
Any species GCAS feels may be illegal or a threat not listed may be removed from auction.
Any species listed as “Dangerous” or “Injurious” is prohibited.
Any species that violate CITES laws is prohibited.

For pictures:

www.dec.ny.gov/docs/lands_forests_pdf/isprohibitedanimals.pdf
www.dec.ny.gov/docs/lands_forests_pdf/isprohibitedplants2.pdf



GCAS Member Discounts at Local Fish Shops



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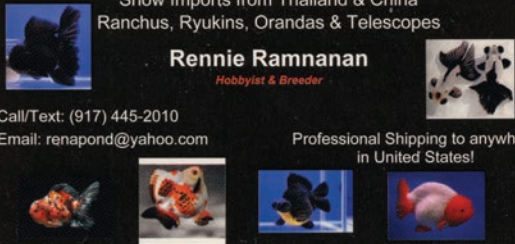
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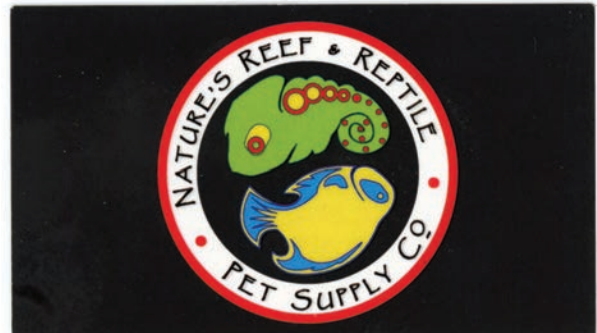
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Fishy Friends' Photos

by Greater City Aquarium Society Fishy Friends

***B**elow 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!*



Shell Game

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.

A series by the Undergravel Reporter

Last November, I alerted our members to “World Algae Day” (October 12 if you’ve forgotten). In addition to fish, many of us use our tanks to grow plants (see Stephen Sica’s article in this issue), amphibians, reptiles, etc. So, I’m now letting you know that May 23 is “World Turtle Day”¹.

The purpose of World Turtle Day “is to bring attention to, and increase knowledge of and respect for, turtles and tortoises, and encourage human action to help them survive and thrive.”²

Turtles (aquatic marine), terrapins (semiaquatic freshwater), and tortoises (land based) have been around a long time, virtually unchanged from the dinosaur era. They are tough survivors. One recent example: a fish was found with a live turtle in its stomach. When the Florida Fish and Wildlife Conservation Commission (FFWCC) was collecting tissue samples from fish, a researcher noticed “movement coming from the stomach of a bass.”³ It was a live turtle (healthy enough to later be released back into the wild).

References:

¹ <https://nationaldaycalendar.com/world-turtle-day-may-23/>

² https://en.wikipedia.org/wiki/World_Turtle_Day

³ <https://www.news18.com/news/buzz/live-turtle-found-inside-stomach-of-fish-by-biologists-in-florida-3505082.html>

⁴ <https://www.sfgate.com/news/article/In-Israel-mayo-provides-miracle-for-endangered-15972388.php>

That doesn’t mean that they are not immune to the same environmental dangers of fish or other animals. For example, Israel’s National Sea Turtle Rescue Center is treating endangered green sea turtles affected by an oil spill that has coated most of Israel’s 120 miles (195 kilometers) of Mediterranean coastline with sticky tar. It has caused extensive damage to wildlife, including sea turtles.

Guy Ivgy, a medical assistant at the Sea Turtle Rescue Center in Michmoret, north of Tel Aviv, said 11 turtles are being treated. The center is run by Israel’s Nature and Parks Authority. “They came to us full of tar. All their trachea from inside and outside was full of tar,” he said. Workers have been removing the toxic substance from the reptiles’ airways and found a creative way to flush it out of their digestive tracks.

“We continue to feed them substances like mayonnaise, which practically clean the system and break down the tar,” Ivgy said. The recovery process is expected to take a week or two, after which the turtles are expected to be released back into the wild. Thousands of volunteers and clean-up crews have mobilized to remove tar from Israel’s beaches, a task that is expected to take months.

OK. I like mayo on a BLT, but I’m not sure about it on my 30+ year old terrapin (although he’d probably enjoy it).



A 6-month-old green sea turtle is cleaned after an oil spill in the Mediterranean Sea



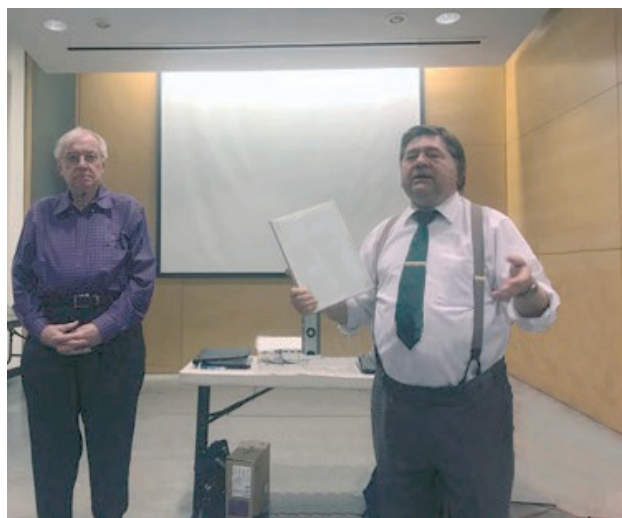
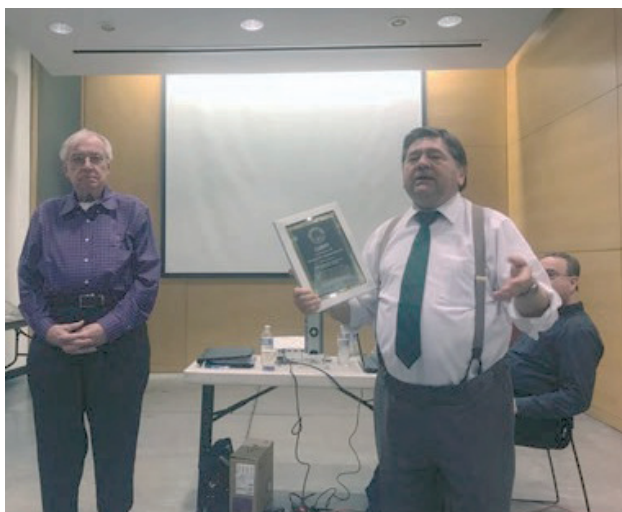


Fin Fun



L O O K & SEE

There are ten differences between these two photos (taken at our last physical GCAS meeting in March 2020). Can you find them all?

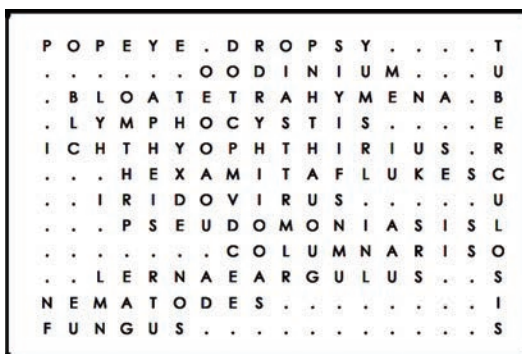


Solution to our last puzzle:

The Nasty Ones

ARGULUS
BLOAT
COLUMNARIS
DROPSY
FLUKES
FUNGUS
HEXAMITA
ICHTHYOPHTHIRIUS
IRIDOVIRUS

LERNAEA
LYMPHOCYSTIS
NEMATODES
OODINIUM
POPEYE
PSEUDOMONIASIS
TETRAHYMENA
TUBERCULOSIS
VIBRIOSIS



Enjoy the 2021 American Cichlid Association Convention in St Louis, MO, July 23-25!



Cichlid enthusiasts of all ages and experience will be there for all things Cichlid, fishy talk and fellowship and have access to world class speakers, manufacturer & vendor booths, an ACA hospitality suite and fish being sold throughout the event.

Everyone is bringing their newest acquisitions, spawned and ready to distribute! Party with your Buddies and go home with new fish!

This event features a slate of 5 special speakers, an extra special vendor room, a tank rental room and a hopping hospitality room. Attendee room sales, found throughout the venue, will be intense. The ACA will not have a Show but the Convention will finish with a large Cichlid only auction!

In 2021 make up for staying at home in 2020!

<https://convention.cichlid.org/>

Use the convention website for Convention & Vendor registration, additional details and offers.



- **Rusty Wessel** - Rusty speaks about the Central American Fishes he successfully collected in Belize, Costa Rica, Cuba, Guatemala, Honduras, Panama, Mexico and Uruguay.
- **Pam Chin** - Shares stories and videos about Cichlid Safaris to both Lake Malawi and Lake Tanganyika. She is a founding member of "Babes In The Cichlid Hobby" whose goal is to make a difference in cichlid keeping.
- **Steve Edie** - Banquet Keynote Speaker, believes that attending conventions all over the US is one of the best means of finding friends, information, and rare species and plans to make Conventions fun for all with "The Talk".
- **Dave Schumacher** - Speaking nationally about basic cichlid genetics and nomenclature, in 2006 Dave bought a fish store and turned it into the Dave's Rare Aquarium Fish specialty store, currently, selling more than 200 cichlid species.
- **Don Danko** - Don has collected extensively throughout Mexico on more than a dozen visits. An accomplished photographer, he has gathered an extensive collection of award winning cichlid photos.



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