

modern AQUARIUM



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number 1

Greater City Aquarium Society - New York



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modern AQUARIUM

Series III Vol. XXIII, No. 1 March , 2016

ON THE COVER

Our cover photo this month is from one of our Facebook Fishy Friends, and features *Symphysodon discus*. A stunningly beautiful fish, there is now also a stunning variety of colors available. In years past, keeping them healthy in the aquarium was reputed to be a challenge, but that seems to be less so now, with so many tank-bred specimens available, and with better understanding of their dietary needs.

Photo by Fishy Friend Wallace Tao

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From the Editor

by Dan Radebaugh

Welcome back to another year with Greater City, and **Modern Aquarium**! In this first issue of the year we bid farewell to 2015 with copious photos from our December Holiday Party and Banquet, our index of articles from last year's **Modern Aquarium**, and the winner of December's cartoon caption contest. Sadly, we must also bid farewell to longtime Greater City stalwart Bill Adams. Be sure and see Joe Ferdenzi's tribute to Bill on page 5.

In honor of this evening's speaker (see our lineup on the facing page), we really take a stroll back to our club's past! Back in 1997 we ran a two-part reprint of an article by Guenther Horstmann of GCAS that originally ran in the November, 1973 **Modern Aquarium**. See page 16. It's a treat!

Killifish play a significant role in this issue. Joe Ferdenzi tells us "The Easy Way to Breed *Pachypanchax sparksorum*," and later in the issue, in Chapter 21 of Rosario LaCorte's **An Aquarist's Journey**, there are killifish galore, including some rarely-seen drawings by Constance White, the wife of General Thomas D. White, a major figure in the collection and identification of fishes during the middle of the past century.

Elsewhere in the issue, Ed Vukich spotlights one of our valued sponsors, Florida Aquatic Nurseries, while Elliott Oshins' "The Pleasure Trip" and our Fishy Friends' Photos page remind us that this hobby can and should be fun. Of course then I come back and spoil it by reminding all of our readers that when you're looking at things online and responding to emails or social media, there are inherent hazards that could create experiences that are very much not fun. Be careful! Always think before you click!

The issue wraps up with The Undergravel Reporter telling us how to print bones, and our Fin Fun puzzle, this month entitled "Reading the FINE PRINT."

Share your experience and knowledge with us! Write about your successes! Maybe even mention some of your failures—sometimes those can be more instructive than the successes. If you're a little unsure about the state of your writing technique, don't worry—that's why editors exist. If you don't share what you know, who will?



A case in point is this month's cover photo. Some beautiful discus there! For a while, back in the 70s and 80s this species was practically the face of fishkeeping. Today there are many more models (or at least colors) to choose from. And yet, I cannot recall seeing an article on those fish in **Modern Aquarium** for at least as long as I've been Editor. Someone in the club must surely be keeping them. Please! Send me an article! I might want to try my hand with them, and you might have some valuable insight.

If you have an article, photo, or drawing that you'd like to submit for inclusion in **Modern Aquarium**, it's easy to do! You may email it to gcas@earthlink.net, fax it to me at (877) 299-0522, or just hand it to me at a meeting. However you get it to me I'll be delighted to receive it! So will our members!





GCAS Programs 2016

It is our great fortune to have another admirable cast of speakers who have so graciously accepted our invitation to join us throughout the coming season, bringing us their extensive knowledge and experiences. You certainly won't wish to miss a moment of our prominent guests, not to mention the friends, fish, warmth, and camaraderie that accompanies each meeting.

March 2	Matthew Wickey from Tetra/ Spectrum Brands <i>Fish Nutrition</i>
April 6	Thomas Keegan <i>Ponds</i>
May 4	Tom Allison <i>Zoo Med Laboratories, Inc.</i>
June 1	Rusty Wessel <i>TBA</i>
July 6	TBA <i>TBA</i>
August 3	Silent Auction
September 7	TBA <i>TBA</i>
October 5	TBA <i>TBA</i>
November 2	TBA <i>TBA</i>
December 7	Holiday Party!

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 (877) 299-0522. Copyright 2016 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 donnste@aol.com. 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. For more information, contact: Dan Radebaugh (718) 458-8437 or email gcas@earthlink.net. Find out more, see previous issues, or leave us a message at our Internet Home Page: <http://www.greatercity.org> or <http://www.greatercity.com>.

President's Message

by Dan Radebaugh

Dear Members and Guests:

Welcome to Greater City's 2016 season! We hope you enjoy tonight's guest speaker, Mathew Wicky from Tetra/Spectrum Brands, who will talk about fish nutrition. More information on this subject is always welcome. As we begin this new year, here are a few reminders that we hope will help assure that 2016 will be an enjoyable year for us all.

- **Parking** is available in the small parking lot, against the fence **only**. Please do not park anywhere else in the lot. Spaces are limited, so if you must park in the lot, please arrive early to ensure availability. If there are no approved spaces available, additional parking is available on the street.
- **The Meeting Room:** Please be considerate of the property. If you spill something, please clean it up!
- **Schedule:** We have use of the room until 10:00 PM, after which setup for the next day's program begins. We've been pushing that 10 PM finishing time quite a bit. To help meet that time requirement, we'll need to get the meeting rolling a little closer to our scheduled 7:30 PM starting time. I know many of you are bringing numerous auction items, which of course is great! However, let's all try to get our items catalogued and set up early enough to begin the meeting on time.

Here are a few other general points of etiquette that may help the meeting move along more smoothly, as well as continue to make our meetings the great experience that they have been:

- **AUCTION TABLE:** Please do not block access to the auction tables by those who need to place items there. And please *leave* the auction table area once the meeting begins. You will have another opportunity during the break to check out what's there. Also, once the auction begins, please leave this area clear so the runners can have unimpeded access to the items.
- **SEATING:** Although our increasing attendance has made seating a little tighter, there are usually enough chairs for everyone. Don't be shy about squeezing in front of people to get to a chair (but please do so quietly once the speaker's program has begun). And if we don't keep packages on the chairs or leave gaps in the row, more people can be easily and comfortably accommodated.
- **NOISE:** If you need to engage in conversation during the speaker's presentation, or during the auction, please do so in the upper entrance area, in a low voice. The acoustics in our meeting room are such that voices carry even at a whisper. You may believe that because you're at the back of the room, or you are whispering, that you can't be heard, but I promise you, you can! And add your conversation to those of others, and the room becomes a cacophony, making it a struggle for the speaker or the auctioneer to be heard, and of course it delays progress of the auction or raffle drawing to have to stop and quiet the room.

All of these requests and suggestions are intended to keep our meetings as enjoyable as possible for everyone, and to preserve our good relationship with the venue. Your cooperation will help everyone continue to enjoy participating in our meetings each month.

Dan



Bill Adams

1926-2015

“The Gentleman Aquarist”

On December 29, 2015, long-time Greater City member Bill Adams passed away at his home in Westbury, New York following a brief illness. Bill rarely missed a meeting, and you could usually spot him sitting in the first row. His smile and warm greeting were something all of us looked forward to every first Wednesday of the month.

Bill was not just active in Greater City. You could count on seeing him just about every month at these other New York City area clubs: the Nassau County Aquarium Society, the Long Island Aquarium Society, the Metro Area Killifish Association, and the Long Island Killifish Association. Bill was especially active in the latter, and had served for decades as its Treasurer—a service that he continued until the day he died.

Bill's primary specialty was killifish. In fact, Bill was one of the best killie breeders in the U.S.A., as his numerous awards would attest. He won prizes both at local shows, including those held by Greater City, and at regional and national killifish conventions. At the Long Island Killifish Association, Bill was a perennial winner of its Bowl Show Championship, including a record ten years in a row. He was a generous donor of killifish to auctions as well, and his beautiful fish always generated great interest.

But beyond these piscatorial accomplishments, what fellow hobbyists will remember most was his gentlemanly ways. You could always count on Bill for a genuinely warm greeting and good conversation.

No one could ever recall a single cross word from Bill. He was polite and friendly with everyone. Yet his polished manner of speaking always exuded a wisdom and authority that few could match.

Bill was born on September 21, 1926. When he was but a teenager, Bill enlisted in the U.S. Navy, and served during World War II. After the war he married his lovely bride Gladys (who predeceased him), and they raised three children: Kathy, William, and Tracy. Bill is also survived by four grandchildren: Jennifer, Lauren, Christian, and Cody. Our condolences go out to all of them.

Upon his death, many fellow hobbyists expressed their feelings about Bill in various ways, including emails and social media. His constant traveling buddy, Harry Faustmann, wrote: “I will miss my traveling companion to AKA conventions and tropical fish club meetings for the past forty-five years! And yes, he

was a true gentleman.” All-time hobby great Rosario LaCorte had this to say: “I know we’ll all miss Bill enormously,” and also complimented Bill for his generosity and exuberance. Veteran Greater City member Mark Soberman added, “Bill was a class act. He will be missed.” Seemingly summing it up, Warren Feuer, another fellow hobbyist and friend, penned the following: “It’s a big loss for us all. Bill was a true gentleman.”

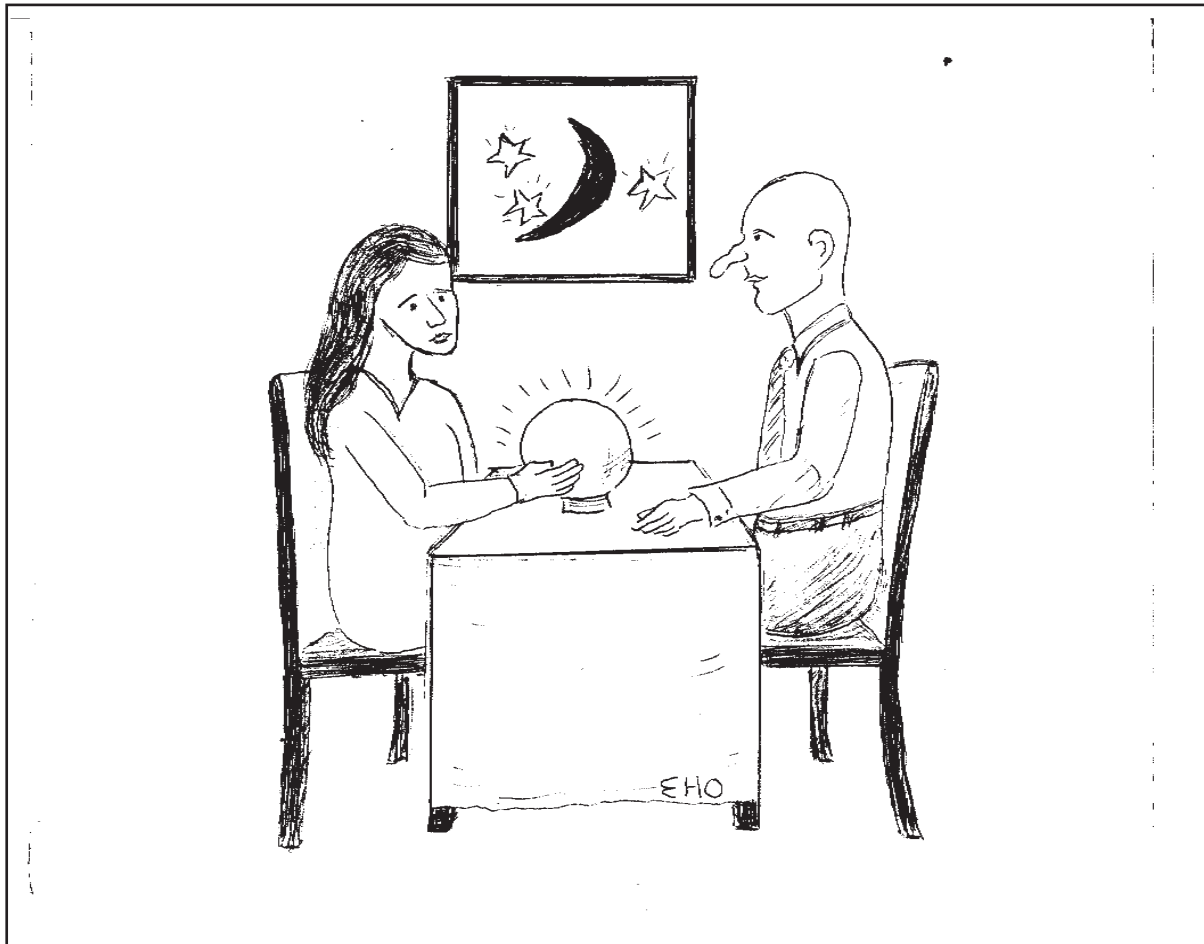


Joe Ferdenzi

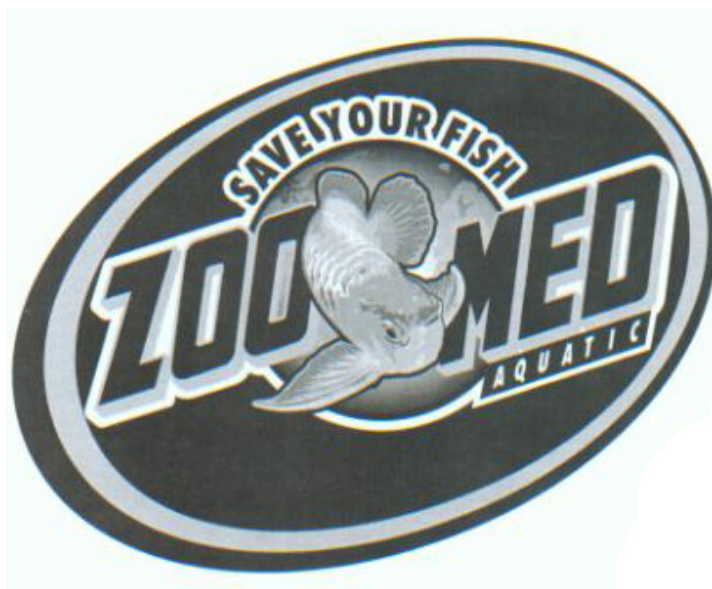


Photo by Mike McNamee

December's Caption Winner: Denver Lettman

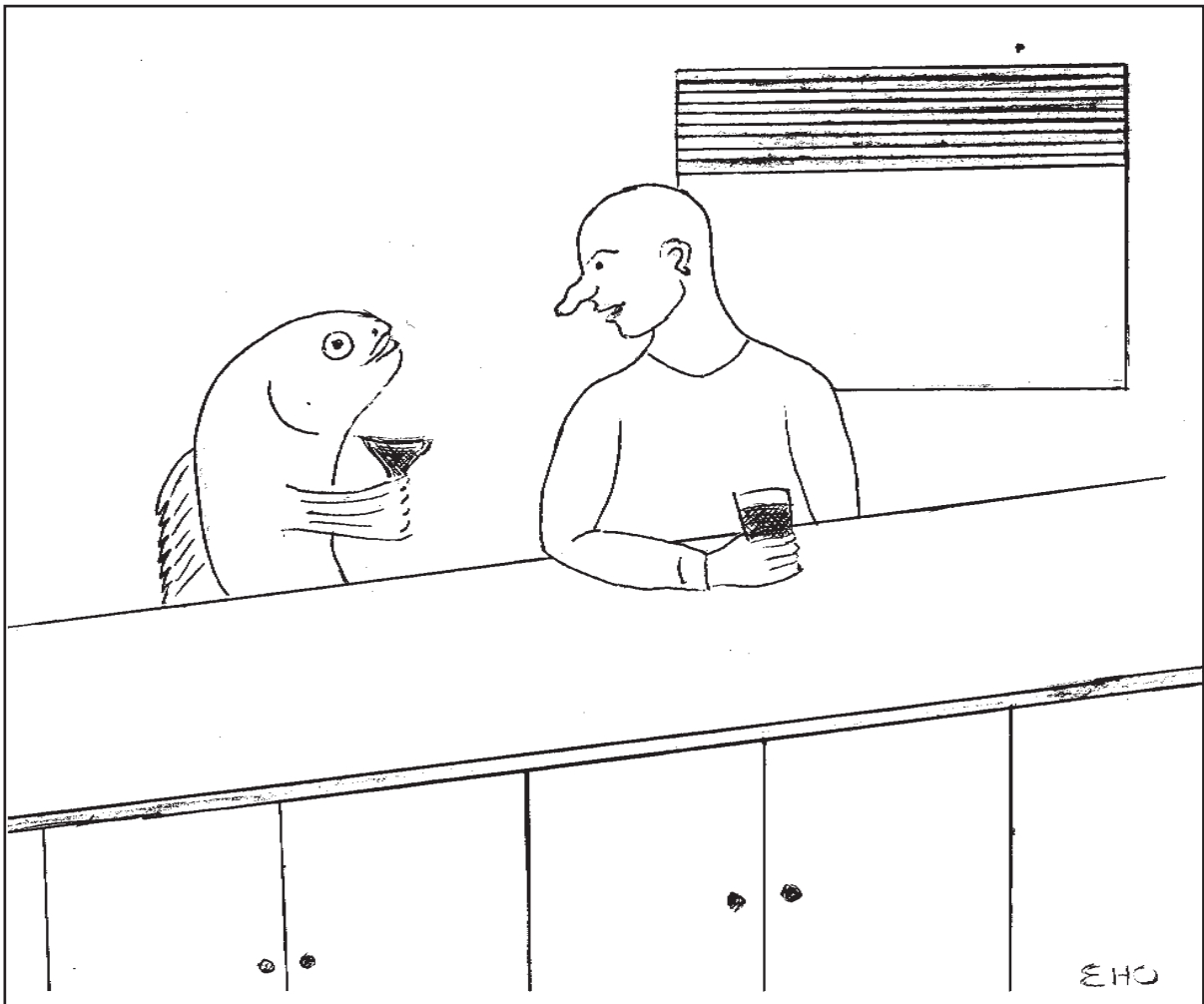


I see you sleeping with the fishes!



The Modern Aquarium Cartoon Caption Contest

Modern Aquarium has featured cartoons before. This time though, 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 can turn in to Marsha 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 Joe Gurrado



Emma Haus



Ben Haus



Florence Gomes



Dan Radebaugh



Jeffery Maynard



Lamonte Brown



Victor Hritz



Al Grusell



Barbara Small and Marsha Radebaugh



Elliot Oshins and Pete D'Orio



Jeff Bolbach
Artie Friedman



Bob Klein and Dan Puleo



Natalie Linden



Gilberto Soriano and guest Ming



Walter Gallo



Jillian and Andrew Jouan



Sharon Barnett and Donita Maynard



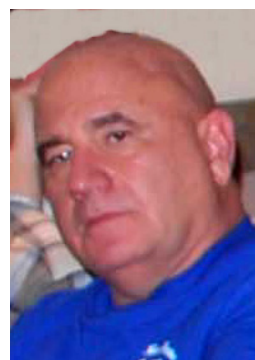
MaryAnn Gurrado



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GCAS Awards for 2015

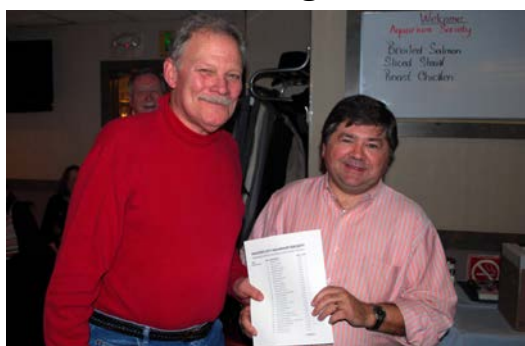


Aquarists of the Year: Al and Sue Priest



Bowl Show Champion: Rich Waizman

Breeders Award Program



Ed Vukich



Jeff Bollbach

Door Prize Winners



Fran Kasman



Lamont Brown

2015 Author Award Program:



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Horst Gerber



Bill Amely



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The Easy Way to Breed *Pachypanchax sparksorum* A Jewel from Madagascar

Story and Photos by Joseph Ferdenzi

If I could only keep one group of fishes, I have no doubt that I would choose killifishes. Why? Because this group includes many small but highly colorful fish, with an appearance so exotic that few other groups of freshwater fishes can match—but I suppose I would stress the colors. There are many African and South American killifish species whose colors would rival those of many marine fishes. Yet they are small, and therefore can be maintained in relatively small aquariums. And I want to further stress that these colors are not man-made—they are as nature has bestowed them. While most killifish keepers are familiar with the species from continental Africa and South America, one group of killies has not yet become as familiar. This group consists of the killies from Madagascar. In that group is the subject of this article, *Pachypanchax sparksorum*.

Thanks to the efforts of people such as Dr. Paul Loiselle, many of these killies are becoming popular with hobbyists. In fact, my *sparksorum* were acquired through Dr. Loiselle. These fish originally came from the Anjingo River, to which they are endemic.

This is not a large fish. Males top out at around three inches; females are slightly smaller. Although they do not possess bold colors as do some killies (think *Nothobranchius rachovii* by way of contrast), they are very pleasing in appearance. The photo accompanying this article shows the arrangement of dots on the bodies of males, as well as the dark bands on their unpaired fins, which are suffused with a light yellow color, that make an otherwise beige fish a bit of a standout in the *Pachypanchax* world.

I have been successfully keeping *P. sparksorum* for some two years now, and have distributed fry to many hobbyists. How I have done so partly explains the motivation for this article. But first, a little general background, especially relevant if you are a beginner with killifish.

Most egg-laying aquarium fish—and this includes such large groups as catfish, cichlids, barbs, tetras, and rasboras—lay their eggs in large quantities in a single spawning event. Not so with killies. Most killifish females will lay one or two eggs a day, and not necessarily every day. Therefore, collecting killifish eggs, especially from the non-annual species (the vast majority of killifish), becomes a very time-consuming task.

So, you get the picture—breeding killies is very labor-intensive if you do it the conventional way.

But what is the conventional way? Well, for all but the true annuals (whose eggs must go through a “dry” period of hibernation) it consists of providing a spawning medium (the most common being a “mop”



Pachypanchax sparksorum pair.

made of synthetic yarn) where the killies lay their adhesive eggs. Every day or two you pluck these mops from the aquariums and examine each strand (a typical mop will consist of anywhere from 50 to 100) for the eggs. You remove them using your thumb and forefinger, and place them in a small container of water until they hatch. Well, if your life is anything like mine, do you have time for that? (What is my life like? Let's see: On work days I leave home at 7:30 AM and return at around 7:00 PM. Then I go to bed at around 10:30 because I need to be up by 6:30. That leaves a whopping 3.5 hours to do everything else—you know, the spouse, the children, the house, and I don't want to leave out eating.) When you throw in feeding the fish and routine tank maintenance, I wish you much luck in having the time to go looking for eggs in six to a dozen mops!

Therefore, I have devised a solution. It consists of keeping *sparksorum* in heavily planted tanks. Before I describe this setup, I readily acknowledge one disadvantage—you will never produce as many fry as you would the conventional way. No matter how heavily planted your tank is, a certain number of



Hornwort.

fry will fall prey to their parents and older siblings. But if, like me, you have scarce time to pick eggs, the answer to the question, “Is getting some fry better than getting no fry?” explains why I have chosen this method in my present stage of life.

Most killifish do not prefer brightly lit tanks, so heavy plantings also create an environment much to their liking. My experience has led me to conclude that the ideal planting consists of a floating plant such as hornwort, combined with a low-light plant such as *Anubias*. In my opinion the hornwort/*Anubias* combination is easy because neither of these is finicky about water conditions. I usually include gravel in my setups even though *Anubias* and hornwort are not planted in the gravel. At present, my *sparksorum* breeding group is housed in a ten gallon tank with a slate bottom and no gravel.

When feeding these fish, make sure you include very fine foods, so that the fry also have something to eat. Newly hatched brine shrimp are an ideal live food in such a setup—both adults and fry will relish it.



P. sparksorum in 10 gallon tank.

However, like most non-annual killifish, *sparksorum* will eat most anything, and they do not require live food. Depending on the size of the tank, you will occasionally have to look for fry swimming among the floating plants, and remove them. Why risk losing them? So when I see fry swimming among the plants, I catch them with a net and place them in a small rearing tank (one to two gallons) with other similarly sized fry until they are about three-quarters of an inch in size, at which time they can be moved to a larger rearing tank (10 gallons).

If you can, when acquiring your *sparksorum*, try to get at least three pairs. This insures some genetic diversity, results in less stress on individual fish, and of course produces more fry.



P. sparksorum juveniles.

The photos accompanying this article illustrate what my tank looks like. It has a box filter in one corner, containing crushed coral on the bottom and polyester floss on top. Because this tank is located near a drafty corner of my fishroom, I am using a heater to maintain the temperature at around 75° F. I have not tested the pH or hardness, but my tap water is usually around 7.0 (neutral). Water changes are done at the rate of about 20% every month.

So, if you are interested in keeping a very handsome killie from a truly exotic location, I can heartily recommend *Pachypanchax sparksorum*. I think you will find that they are a pleasure to maintain and an excellent killie for beginners (and you old-time experts as well!).



A version of this article was previously published in the Journal of the American Killifish Association, Jan.-April 2015 (Vol. 48, Nos. 1-2).



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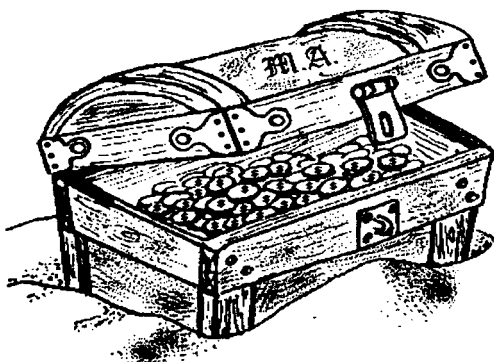
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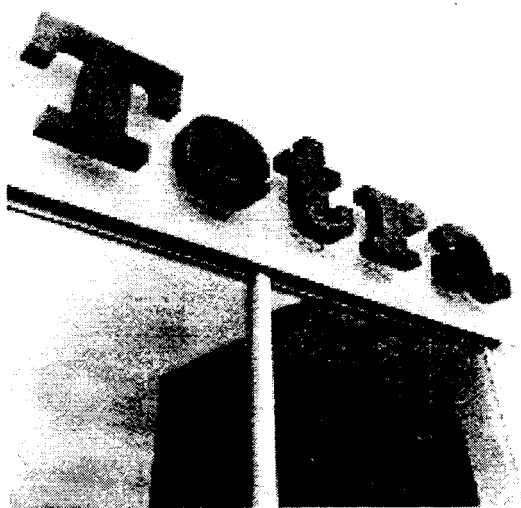
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Treasure Chest

The article we have chosen for this month's edition of the "Treasure Chest" was first published in the October 1973 issue of Modern Aquarium. It makes reference to a very well known name in the hobby, as well as a product that is still used today. We hope you enjoy . . .



Guenther Horstmann, GCAS

During the holiday season around the 4th of July, I went to visit my relatives in Germany. They live only a few miles from the town where our world-renowned fish food -- TetraMin -- is manufactured. For those of us who missed geography when the town of Melle was discussed, let me tell you to look southeast of Osnabrueck on a map of Germany

Ordinarily there are no guided tours through the factory except for special occasions; but somehow I had managed to convince

someone of the interest of our readership and I was given the privilege of taking this tour.

While I was waiting in the spacious lobby for Miss Hoffmann, I was fascinated by a replica of a giant fossil on the wall. It was a petrified *Portheus molossus*, a fish that lived some 80 million years ago in the area now known as Kansas. It grew to more than 15 feet. Later, when the entire North American Continent was lifted by the movement of the earth, the strait from the Arctic Ocean to the Gulf of Mexico disappeared and many of these fish were petrified in massive lime deposits. Although the *Portheus* has been extinct for many million years, it still has relatives today. The petrification shown is one of the largest and rarest known to the world. The copy here was made from the original at the California Academy of Sciences in San Francisco, the only cast ever taken. It was then presented to Dr. U. Baensch, the founder of the Tetra Werke, to honor his pioneer work in keeping and feeding tropical fish.

Interest in aquaria runs deep in the Baensch family. Back in 1923, Dr. Baensch's father published a book entitled "Tiere hinter Glas" (Animals behind Glass), an informative and interesting work on aquaria, terraria and insectaria. It has remained popular in Germany even to the present day.

Dr. Baensch began the hobby of keeping tropical fish at the age of nine with a pair of neons, a gift from his father. In high school and college he studied biology, zoology and botany while continuing his interest in aquaria and tropical fish. Originally, he began as an agriculturist, managing a pet shop and a small wholesale outlet between 1951 and 1953, turning two of his hot houses into a nursery for tropical fish and water plants at the same time. Bringing fish through the winter months created a problem for the hobbyist in Germany. Live food was scarce; and in search of a substitute, Dr. Baensch succeeded in developing a product called BioMin, a perishable paste which had to be kept under refrigeration and had to be fed to the fish with a spoon. Fellow hobbyists soon realized that the fish raised by Dr. Baensch were healthy in winter, and in 1953 a production of BioMin in tubes was established. Location of the production: A meat grinder in the kitchen of his home.

It was in his professional breeding work that Dr. Baensch first hit on the idea of drying the Tube Food Paste. He built the first drying cylinders himself: two small rotating drums about five inches in diameter and two feet long. On these cylinders, the paste was dried electrically,

forming a thin film. Breaking this film up into flakes with his household food chopper, Dr. Baensch produced the first TetraMin flakes.

That was just the beginning. As a professional breeder, Dr. Baensch was familiar with the other fish foods on the market at the time. He knew the difficulties aquarists encountered with these foods, and he worked to create a food which would spare the hobbyists as many problems as possible. A frequent complaint among hobbyists, at that time, was

that dry food would sink too fast in the aquarium, dropping uneaten to the tank floor and rapidly fouling the water. In response to this complaint, Dr. Baensch developed a nutritious fish flake food which floated on the water surface for a long time, sank slowly in the tank, and did not cloud or foul the water. He called it TetraMin Staple Food.

What's in a name? Contrary to what is sometimes believed, the name "TetraMin" does not refer to the Neon or Cardinal Tetra. Rather it is a compound of two different words: "tetra" and "vitamin." The first part of the name, "Tetra" comes from the ancient Greek word for the number "four" and stands for the four different kinds of nourishing flakes from which the original TetraMin was produced. The "Min" in TetraMin comes from "vitamin," a Latin-based word whose original meaning is "something required for life." In the years since Dr. Baensch first developed his remarkable fish food, the name TetraMin has become a household word among aquarium hobbyists in every corner of the globe.

The principle of the production has remained the same. Let's follow Miss Hoffmann now to see the technique in progress. All but the recipe was free to be viewed. Miss Hoffmann took me to the upper floor. Sack upon sack of raw ingredients were stacked in a large storage room, all of them labeled with secret codes. The dry materials are pre-manufactured, Miss Hoffmann explained, while she showed me 16 4' x 1' silos in the floor. "These silos are filled with the raw ingredients and then released by computer at the proper quantity for the dry mixture," Miss Hoffmann said. "On the floor

below, there is a mill, which grinds the materials almost to powder."

When the grinding process is completed, the powder runs through a magnetic machine to eliminate the presence of metallic matters and after that it passes an anti-contamination process to kill any possible larvae or eggs of harmful insects.



Portheus molossus

The basic ingredients are then transferred to the mixing drum, where they are combined with the special TetraMin formula. The

mixture is then transferred through a series of tubes to a big vat, where hot water, large quantities of vital nutrients such as fish roe and beef liver, and natural agents to promote fish color, including carotene, are added. Only natural ingredients go into the TetraMin formula, no chemicals are used. The cleanliness is striking in this factory. It reminds me of a dairy farm. It's hard to believe that "only" food for fish is being produced.

After the basic ingredients have been combined and the water has been added, the thick porridge-like soup is pumped into the huge drying cylinders, where the moisture is removed and a paper thin film remains as a result of the procedure. The cylinders are now heated by means of steam and are surrounded by ladders and gangways for the workers to control their function. The one-man business has grown into a four hundred man operation.

There are six different flakes combined in TetraMin. Each has its own formula and each mixture is prepared individually, dried, and ground into flakes. The flakes of each series are stored in plastic bags of 20 pounds. In another division, the six different flakes are combined according to a precise scientific formula. After the flakes are mixed and screened for size, they are sealed in plastic bags and labeled with the date of production.

A specially designed canning machine literally vibrates the flakes into the plastic containers as we all know them. Empty a can of TetraMin and try to put them back. You will have at least a cup-full left over. In our next issue I will tell you more of other products and activities in the TetraMin Factory.



Continues on next page...

Tetra Werke is more than just a fish food factory. Tetra Laboratories, a complex of modern, well equipped scientific laboratories staffed with trained researchers, is in constant search of new and better products, as well as improvements of old ones. More than 350 scientifically experimental aquaria are maintained here, and exhaustive tests check the quality of every Tetra product. A unique gas test, for example, pinpoints any possible defects in packaging. Such defects might lead to **spoilage**, and Tetra is concerned that its products **reach the** hobbyist in the best possible condition.

Knowledge about fish nutrition and aquarium care is constantly expanding at the laboratories. Over the past twenty years a great number of new Tetra products have made their appearance. There are now special Tetra foods for Goldfish, for marine fish, for baby fish — both egg layers and livebearers. TetraMin Flakes, TetraTube Food, Tablets, and TetraTips make it possible for the hobbyist to meet the precise feeding requirements of every fish, the surface feeders, middle feeders, and the scavengers alike. And a variety of nutritious freeze-dried foods is available in Tetra FD-Menu. But there is more to aquarium care than just feeding fish. The Tetra-Care line includes a full range of products to safeguard fish health and condition aquarium water for maximum growth of both fish and plants. With the new Tetra Test Kits, the hobbyist can measure and regulate the vital factors of pH, nitrite content, and water hardness in an aquarium.

Although the care and breeding of tropical fish is one of the most popular hobbies in the world today, it is a sad fact that the average hobbyist gives up his aquarium after only about six months. There are plenty of reasons for this problem; as experienced hobbyists know, caring for an aquarium is not as easy as it might appear at first glance. Yet the dedicated aquarist who has learned how to keep fish properly considers the effort a rewarding and lasting pleasure.

The aquarist of twenty years ago would certainly be surprised to see the state of the hobby today. Over the brief span of two decades, the care and breeding of tropical fish has grown from a demanding pastime practiced by a small group of enthusiasts to the second most popular hobby in the world. Miss Hoffmann explained that the staff of Tetra Werke is proud to play a role in this development and is grateful for the continued support of aquarists

hobbyists, scientists, and manufacturers, the next two decades promise still more growth in the ever expanding hobby. Not only does Tetra Werke provide us with the most essential tools for aquarium care, but there are numerous publications as well, containing articles on new and unusual fish, news on developments in aquarium science, many valuable practical tips, and a wealth of full-color pictures. The Aquarium Digest International is also published in English and provides helpful advice for the aquarist.

Tetra's Export Division is located about 15 miles away from the factory. Carton upon carton of all kinds of Tetra products are stacked in a warehouse with more than 30,000 square feet of space. The different languages and characters, such as Russian, Japanese or Arabic on the freight bills give this place an international touch.

More than 20,000 pounds of TetraMin go to Brazil each year. Since the introduction of the flake food to newly caught tropical fish, the death rate of the fish has dropped to almost nothing. Not only have the fish discovered a taste for TetraMin, Miss Hoffmann explained, but also the native fishermen of tropical South America were found to use the flakes to make themselves a bowl of soup with hot water. No wonder that the supply of the flakes is kept behind locked doors now, but on a strenuous expedition into the jungle, natives are often given a ration of TetraMin to keep them in the best of condition. Obviously the soup made from the flakes is as nutritious to man as it is to the fish.

Through the window of the cafeteria I watched a truck being loaded to expedite "the food for the world of fishes" literally into every corner of the world.

I would like to thank Tetra Werke for the opportunity to visit their facilities, and I would like to thank Miss Hoffmann in particular for providing me with written and photographic material to support this article. I sincerely hope you all have enjoyed reading about one of the greatest inventions in tropical fish keeping.



Meeting Reminders



Almost every month at least one meeting reminder postcard is returned undelivered. Sometimes the member moved and just forgot to update his or her contact information with Greater City. Other times, well it's a mystery—the address was correct, but the Post Office marked it as “undeliverable.”

Unlike some aquarium societies, at Greater City there is never a charge for non-members to attend, there is no “bidder card fee” to bid on items in our monthly auctions, the refreshments are free to everyone at the meeting, and anyone can purchase raffle tickets. But membership does have its privileges, including this award winning magazine, door prize chances, the ability to participate in our bowl shows, and advance reminders of our meetings. If you have an e-mail account, please consider getting your meeting reminders by e-mail, instead of by postcard. You will be getting two notices (one a week in advance, the other a day in advance) instead of only one, and the chances of non-delivery are virtually none (unless you change your e-mail address). While it's a very small thing, you'll even help the environment by using less paper. An e-mail sign-up sheet is at the membership/Modern Aquarium table, or send an e-mail to gcas-webmaster@usa.net.

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The Pleasure Trip

by Elliot Oshins

I heard that Artie and Ed were going to a fish auction in New Jersey and they were nice enough to invite me to go along. This is a great place to bid on some great fish and plants.

Ed Vukich picked me up early Sunday morning and then we were off to Artie Friedman's house to pick him up. The three of us then made our way to Rudy's house, but not before we stopped for our morning bagels and coffee before making the trek over the George Washington Bridge to New Jersey.

Our trip took a little over an hour and a half, when we arrived at the auction house. The auction took place in what looked like an old veterans hall. When you enter the hall you can feel the excitement. The first thing you need to do is pick up your number at a table, which you will use to identify yourself when bidding on fish or plants.

The four of us took our seats up front, and of course Artie and Ed knew some of the people running the auction. The auction was offering an array of fish and plants, and I was amazed to see so many bags of fish, mostly cichlids. I felt like a kid in a candy store, and couldn't wait for the auction to begin.

The auctioneer was very professional, and I think did a great job. The first items up were large fish tanks, and Rudy was right there with his hand up, and bid and won one of the tanks. My first thought was great, but will we have enough room in the car to get this tank back to Long Island?

I hadn't been to an auction in over ten years, and I wasn't familiar with many of the fish being auctioned, and thought to myself that some were pretty expensive. Feeling like a novice, I asked Artie ("The Maven") to give me a head's up when a fish that he thought I might like came up for auction.

The auction continued, and after two and a half hours, Artie suggested I bid on the next bag of fish coming up. This bag of *Ophthalmotilapia ventralis* contained two males and six females from Lake Tanganyika; this species is a mouth brooder. I was a virgin when it came to auction bidding, but took the plunge and held my hand up high. I realized that somebody else was bidding against me and was unaware of what the fish I was bidding on were worth. Artie "The Maven" whispered to me, like the Godfather whispering to Sonny or Michael, as to what to do next. And as you know, you don't disobey the Godfather!

The bidding continued for a few minutes, and although a little skeptical about the cost, I triumphantly outbid the other person and won the auction. I felt like

I had just acquired a Picasso. The fish I won were a little over two inches long; the females were gray in color and the males light blue. The males have two long ventral fins with yellow tips at the end, which look like eggs. The fish spawn in sandy pits where the temperature ranges from 77° to 81°. A large tank should be used, and should have a sandy bottom with rocks.

I also purchased a bag of six small Malawis, *Aulonocara maylandi* sulfur heads. They too are mouth brooders, and prefer a tank with lots of rocks with hiding places. I believe these fish are too young to breed yet. I also bought four small angelfish, some catfish, plants, and some snails.

The auction continued for a while, and then the four of us were on our way back to Long Island with our new found acquisitions. All in all, it was a very nice way to spend a Sunday afternoon with my friends. The trip back was good, and we didn't hit too much traffic. Although it was a little tight in the backseat with all the bags of fish, plants, and fish food, it was definitely a trip worth taking. Along the way home, we ended the day the same way we started—with bagels and a hot cup of coffee.

Many thanks to Ed for all the driving he did, and a big shout-out to Artie for his help during the auction.

Once home the work began, as I had to find homes for all the fish and plants I had purchased. I knew I had an empty 55-gallon tank that would be a great new home for the Tanganyika fish. It took me awhile, but I was able to find homes for all the rest of my new fish. The plants I bought I floated in the tanks, and I will plant them tomorrow. The Tanganyika fish *Ophthalmotilapia ventralis* spawned for me about two weeks later. As they are mouth brooders, the females gather their eggs in their mouths. Then the females go after the ends of the males' ventral fins which have yellow spots. They think they are eggs. The males then fertilize the eggs.

Three weeks later, I gave Artie a call to come and help me strip the fish. Some of the fry still had their yolk sacks, which meant I could not feed them brine shrimp yet, as they were getting their nourishment from the yolk sacks. I then transferred them into a very small tank, and about five days later I was able to start feeding them all brine shrimp.

All in all, I think the auction bug bit me that day in New Jersey, and now I am looking forward to our next road trip and the next auction. I'm hoping that I will be the highest bidder at the next auction and come home with some great fish!



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!*



Fishy Friends: Don't Get Hooked!

by Dan Radebaugh

One of the relatively new features in **Modern Aquarium** has been our Fishy Friends' Photos column, which is an offshoot of our GCAS Fishy Friends Facebook page, begun and administered by Sharon Barnett. This has been a very nice new venue for Greater City, where members can keep us all updated with what they're up to fish-and-aquarium-wise, without waiting for our monthly meetings.

Of course not everyone is a fan of social media sites such as Facebook, Instagram, Twitter, et al. You will hear and read many criticisms of these sites: they'll rot your brain (well, maybe), they expose you to illegal or at least unacceptably intrusive activities by government or commercial interests (I don't think the NSA is terribly interested in most of us, but Google's advertisers certainly are), or they can be used by employers or potential employers to check up on us (grow up – of course they will!). Offsetting these concerns are things like tracking down people whom you'd like to find, or perhaps being tracked down by people by whom you'd like to be tracked down. Every coin has two sides, after all.

In any event, these sites are very popular; they do allow people to keep in touch, however ephemerally, and I don't think they're going away anytime soon. However, there is one set of concerns within this brave new world that also isn't going away anytime soon, and that is the threat to your personal and financial security, or at least the security of whatever information, financial or otherwise, that you have stored on your computer, or on any other device that is capable of connecting to the World-Wide Web. How safe are you? What would you do if your data were destroyed or compromised? What are some of the threats? Do the various social networks provide a way for potential malefactors to gain access to your computer and/or the data stored there?

The answer to the preceding question is "yes." If you're online, anyone in the world with a computer and some skill does potentially have access to your computer and anything stored on it. What is the threat level? Greater than you might think. Are there things you can do to reduce your risk? Of course. Can you eliminate the risk altogether? Alas, no. This little article is not intended to be a computer advice column, much less a comprehensive security overview. However, there are some things that everyone who goes online should bear in mind.

I'm sure that most of you have at least heard the term 'computer virus.' It's a term that has been around for many years. Perhaps one of the most famous was the ARPANET worm chronicled by Clifford Stoll in his 1989 book, **The Cuckoo's Egg**. This book is a very good read, even if you aren't a computer person. There was also a well-known virus that was going around back in 2000/2001, which seems to have been designed to contribute to the 9/11 attacks, by causing the infected computers to attempt to connect to the White House computer system, thereby causing

that system to be so deluged to connect attempts that it would become overloaded and not usable at the time of the attacks. Fortunately, it was detected and neutralized in time to prevent any major damage.

The most recent famous virus is the "ransom-note virus." This is not just one virus, but rather a new approach. Rather

than just being a form of vandalism, it's a money-making effort, where your computer will "tell you" that it has been infected by a virus that will encrypt your files, and provides you with a phone number you can call to arrange payment to the virus distributor, who will then give you the key to restore them to a readable state. There are several versions of this scheme, some demanding large sums of money. The most prevalent these days are ones that ask for a more modest amount, say \$150 to \$300. Some are easier to recover from than others. Like nearly all viruses, one of the best preventative tools is a combination of preparation, suspicion, and alertness.

Preparation means having a decent anti-virus program installed on your computer, and keeping it up-to-date. Alertness and suspicion means that, when you're online or when you receive an email, and you come upon something that doesn't seem quite right, "just say no." Don't proceed. Don't click on the offered link. Don't reply to the email. Don't download whatever is being offered. Don't install anything you don't fully understand. If, in spite of this stance, your machine becomes infected, act quickly.

I started this piece by mentioning Facebook, which is a very popular social media site, because that is how I was introduced to a version of the ransom-note type virus. Mind you, Facebook itself seems to be a well-administered, very safe site. What you need to be alert to are postings with links that take you to another domain, which may be not so well-administered, or



may in fact exist for the sole purpose of entrapping the unwary. So if you're on Facebook or whatever, and you have to click on a link that takes you to a different domain, proceed with extreme caution. For instance, if you need to click on a link that takes you to "the full article," and you encounter a series of links, each labeled "next," you might want to re-think how important that subject matter is.

If you start hearing a message that your computer has been infected with a virus, and that you should call a certain number to get it disinfected, I suggest that you immediately try to close your browser. If you are infected you probably will not be able to do so. At that point, open your task manager. (If you hit [control]-[alt]-[delete] the task manager will come up as one of your choices.) Use the task manager to shut down your browser. Once you've closed the browser (or restarted your machine), you should then use your anti-virus program to scan your machine. With luck, either the virus was not fully installed or your anti-virus will find and neutralize it.

Bear in mind that the next time you open your browser, it will remind you that your previous session was interrupted and offer to restore that session. Say no! Then, if the browser seems to be running OK, close it once again, and do another anti-virus scan. If that comes up clean, then you should immediately perform a disk cleanup, using the built-in utility of that name (Disk Cleanup). When you get the summary of results, and it asks you if you want to delete the files, say yes. By the way, when your anti-virus program tells you a scan is due, take the time to do it. Should these measures not work, you'll need to get professional help, and soon. The longer you wait with the machine running, the more time the malware will have to encrypt or otherwise destroy your files.

All of the above suggestions are intended for PC users. Macs have a different operating system, different utilities, and these days (this wasn't always the case) are not as heavily targeted by hackers. Remember, just because you're a little bit paranoid, it doesn't mean they're not out to get you. Be careful out there!



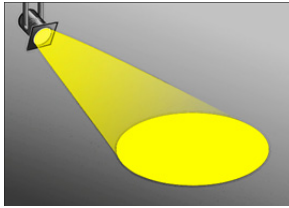
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SPONSOR SPOTLIGHT



By Edward Vukich

Florida Aquatic Nurseries, Inc.

Over the past few years we have been fortunate to receive a most generous donation from our dear friends at Florida Aquatic Nurseries, and this month I would like to feature them, and provide a brief history of this loyal sponsor of the Greater City Aquarium Society.

It all started back in 1957, when Dr. William McLane, after starting out as a hobbyist, developed his love and passion for aquatic plants into what is today America's leading producer of aquarium and pond plants. A family owned and operated business, his vision is now being carried on by his sons and grandchildren.

At their home base in sunny and warm Davie, Florida, Florida Aquatic is located on 15 acres of land where they maintain 500 concrete production tanks as well as 50 marginal beds for their large selection of pond plants. Furthermore, they maintain seven large greenhouses dedicated to producing a large variety of aquarium plants. The entire facility is operated by a core of highly trained and educated aquatic plant specialists, who have many years of experience in

the growth and production of aquatic plants. Florida Aquatic has also been instrumental in bringing a large number of new and unique aquarium plants from all over the world into the hobby for the first time.

Please keep in mind that, while Florida Aquatic Nurseries donates to our club, they only sell wholesale and do not sell retail. However, while visiting your local pet shop or aquarium store many of the potted and

packaged plants you may see will have a tag stating that the plant is from Florida Aquatic, and also containing some care guidelines. In addition, you can ask the storeowner if he carries their plants and products.

Needless to say, whenever we receive a large plant donation

we get a huge turnout for the auction and meeting, and that donation helps the Greater City Aquarium Society continue its mission of supporting and promoting the aquarium hobby.

Again, I wish to thank Florida Aquatic Nurseries for their continued support of the GCAS. Please look for their products in your local fish store. You won't be disappointed with your purchase!



AN AQUARIST'S JOURNEY

Story and Photos (unless noted) by Rosario LaCorte

Chapter 21

This chapter is the part of my journey that I've looked forward to with great anticipation. I knew this was very important, because of General White's contributions to our knowledge of the annual fishes of Rio. His discoveries influenced my interest in fishes probably more than any other reading material that I have come in contact with. My association with Axelrod in the mid-1950s, and conversations with him about General White's discoveries, tweaked him to contact the General, who at that time was Air Force Chief of Staff. They arranged to meet for the purpose of featuring him (White) in a TFH article, in which both General White and his wife Constance were pictured.

That meeting was instrumental in launching a trip to Brazil in 1958 to attempt to find some of the species that White had discovered. Axelrod covered my expenses to accompany him. I remain grateful for that opportunity, as it opened a number of doors for me that have been documented earlier in this narrative. I never met the General, though I would have been overjoyed to have had that experience.

During General White's service time in Brazil, 1940-42, he had a wonderful correspondence with Dr. Myers of Stanford University. Dr. Myers saved all of his letters, as well as the drawings of the species that were collected. The Whites were meticulous in their record keeping. Mrs. White accompanied her husband on many collecting trips, carrying nets and getting her feet wet.

In 1971 the American Killifish Association was to hold its annual Memorial Day convention, and the Metropolitan Killifish Association, which was the host club, asked me to be the keynote speaker at the banquet. At that time I had a wonderful collection of cyprinodont photos, as well as some experience collecting in Brazil.

Upon his retirement, Dr. Myers had donated all his works to the Smithsonian, for safekeeping and for use by researchers. These included the correspondence

with General White, as well as Mrs. White's drawings. I knew of this, contacted Stan Weitzman to ask if I could use slides of the drawings at my talk, along with my own materials. I didn't receive an immediate response, but soon received a small package. Wondering what it contained (I didn't recall ordering anything, and there was no return address), I opened it and was elated to see all of Mrs. White's drawings! I quickly sent Stan a letter of thanks, but weeks passed with no reply. This was very odd, as Stan was always responsive to my communications.



General Thomas D. White, with his wife Constance. Photo from *Tropical Fish Hobbyist*, Summer 1958.

Finally, after a few more weeks a letter from Stan arrived. His opening line was, "You poor guy, you must have been in a turmoil, wondering who sent those slides." He went on to explain that he and his wife Marilyn had been away on a trip to the Rockies, photographing wildflowers, a subject dear to Marilyn's heart, as she had studied botany in college. Mystery solved! The

presentation was very well received. It was the only time I've seen a standing ovation at an AKA Banquet presentation.

This was the very first public showing of Mrs. White's drawings, and I was delighted with the outcome, as well as very grateful to Stan for making it possible. Several years ago, Stan informed me in a personal conversation that the drawings by Mrs. White had either been stolen or misplaced, as they could no longer be found. So this and its illustrations become even more important so that the Whites' contributions can be documented, preserved, and available to all who have an interest in this part of our history.

In 1960 Myers and Weitzman described a new characin from the Orinoco basin, and named it *Brycon whitei*, in honor of General White for his great interest in recreational fishing, which, if my memory serves me correctly, Myers and the General did together in Colombia.

You may recall from Chapter 14 of this account that Dr. Francisco Mago-Leccia, then in charge of



Leptolebias marmoratus (Ladiges 1934). This species has several synonyms. At one time it was plentiful, according to Carvalho in private conversations. After many years it was thought to be extinct, but was rediscovered by a Brazilian aquarist. This photo is by a Brazilian, and the collection site has not been revealed (and I'm in agreement with that decision). There should be a protective law to maintain its preservation. This is the situation with a number of annual species in the Rio coastal area. Mrs. White's drawing at right.



Leptolebias opalescens (now *fluminensis*). Drawing by Constance White 1941-42



This is *Cynolebias splendens*, by Constance White. Described by Myers; later revised by the Brazilian ichthyologist Wilson Costa as *Leptolebias sandrii*. It seems that Costa discovered a paper describing it from 1937 by Faria and Muller, which predates Myers' description. I got this specimen (photo) from Michael O'Neill, a Brazilian who visited with me a number of years ago. His father was American, and the president of the Ford Motor Company in Sao Paulo. His mother was Brazilian. Unfortunately he did not have any females of this species. Carvalho told me that this fish at one time could be found by the thousands. I remember in 1958 going to a higher elevated area where the season was too late to find them.

the Agustin Codazzi Aquarium in Venezuela, told us to take whatever we wished, as the government had slashed the aquarium's funding so deeply. In that collection I did see some specimens of *B. whitei*, not fully grown, but nevertheless in the 10-14 inch range, so much too large to carry home.

General White, a four-star general and a graduate of West Point (1920), was probably the most prestigious military man to show so much interest in aquatics. He was a frequent visitor to the Smithsonian, and on numerous occasions spoke with Dr. Weitzman. The general passed away in 1965, of leukemia. He was 64 years old.

The **Aquarium Journal**, July 1952 (published by the San Francisco Aquarium Society), deeply impacted my interest in freshwater fishes, and exposed a new realm to me—annual fishes. The entire issue, devoted to these fishes, was written by Dr. George S. Myers (1905-1985), of Stanford University, a well-known ichthyologist, and at that time Managing Editor of the **Aquarium Journal**. Quoting Dr. Myers: “The fact that there are fishes which normally live less than a year is still scarcely known to aquarists, or even ichthyologists. The only general zoological textbook known to me which mentions them is Hesse Allee and Schmidt's **Ecological Animal Geography** (second edition, 1951). Even Bullough's book on the life cycles of backboneed animals does not include these strange fishes and their life history, even though the essential facts have been known for about 30 years.

Dr. Myers goes on to mention the little-known fact regarding annualism in some freshwater fishes, that we did not know who the first person was to discover this phenomenon. It is assumed that the first species discovered to be annual was *Cynolebias bellotii* (Steindachner). First imported into Germany as an aquarium fish in 1906, their native habitat was in the vicinity of Buenos Aires, Argentina. At first, ichthyologists were surprised to learn that males and females had different numbers of rays in the dorsal and anal fins, and according to Dr. Myers, at that time no other species was known to have this characteristic. German collectors found that the fish lived in isolated water holes only in the wet season, after which rainfall is almost non-existent, causing the water holes to disappear. During the wet season, when food is plentiful, mating is a daily activity, in which adults dive into the substrate to deposit their eggs, which go into a state of diapause. (Not all egg development is similar, but staggered in different stages.) Nature in its wisdom has created a strategy for the safeguard of the species. Some eggs will hatch the following season, while others may hatch over several seasons. In the event of abnormal seasonal rains, hatching young could very well disappear, not having the opportunity to reproduce because of the abnormal rainfall.

Since their lifespan is minimal in the wild, even though in the aquarium optimal conditions are

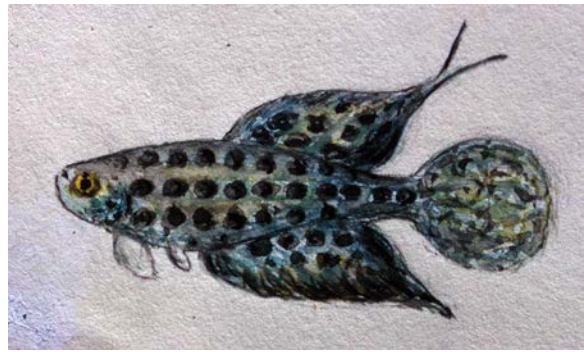
maintained, water quality, abundance of food, and so forth, the adults will begin to show signs of old age, loss of color, diminished appetite, and very frequently scoliosis is the outcome. Death soon follows. In the wild, young emerge from their long developmental stage during the rainy season, while at the same time myriads of other small organisms are making their appearance as well. Food is plentiful, and the young fish forage all day long, causing accelerated growth. In a matter of a few weeks they are able to begin their life cycles once again.

Along came (then) Major Thomas D. White of the U.S. Army Air Corps, stationed in Rio de Janeiro, who was attached to the U.S. Air Mission. An avid fisherman, Major White was also interested in aquarium species, as well as ichthyology. Being an officer allowed him access to automobiles and small aircraft for transportation. During his military time in Brazil (1940-42), White maintained a correspondence with Myers describing habitats visited, as well as documenting many of the fishes collected.

White's wife Constance accompanied him on his excursions, and was thoroughly involved in their studies. Fortunately she made drawings of several of these interesting species from the Rio area. In the early 1970s Stan Weitzman gave me copies of all the correspondence between Myers and White, and they are still in my possession. I have read them all, and I must say that White was very observant, and really knew his fish. On Dec. 14, 1941, he writes, “Species collected in vicinity of Rio: *Rivulus santensis*, *Rivulus dorni*, *Hyphessobrycon reticulatus*, *Phoxinopsis*, *Characidium fasciatum*. Seepage from the foothills of Old Petropolis Road: *Hyphessobrycon flammeus*, *Phoxinopsis typicus*, livebearer not named, *Mimagoniatus micropepsis*.”

There are many notes that I will not go into. I found this of interest: on August 13, 1941 at Porto Nacional in a main stream of the Tocantins River, he observed schools of *Exodon paradoxus*, very fast, great jumpers, which the natives refer to as *Miguelzinho* (Little Michael). Other notes: “Oct 1, 1941 Small clear brooks, reddish water, sand bottom, no plants, 2-3 feet deep, São Luis de Maranhão. *Hyphessobrycon* species – golden cast on body with pink/orange fins—an aquarium fish that grows on one. *Micropoecilus branneri*? Also *Copeina arnoldi* (died before pickling), *Pseudocorynopoma heterandria*. May 12, 1941: Ten miles north of Cabo Frio, Rio de Janeiro, *C. constanciae* cattle water hole 20 ft. in diameter. Feb 6, 1942: I am very proud of hatching *C. whitei*. The eggs were buried in the sand from about Sept 7 to Jan 14th. I siphoned individual eggs into small containers in Oct.” These notes show that White was the first to reproduce *Cynolebias* (now *Nematolebias*) *whitei* in captivity.

The first of these *whitei* to be imported from Germany happened in 1957. Henry Hessel, an importer



Formerly *Cynolebias constanciae*, now *Ophthalmolebias constanciae*. Named for Mrs. Contance White



Formerly *Cynolebias/Leptolebias minimus*. Now *Notholebias minimus*



Formerly *Cynolebias whitei*; now *Nematolebias whitei*



Mrs. White's drawing of female *O. constanciae*.



Leptolebias fractifasciatus costa, discovered by Cruz and the author in 1979.

in New York, was the recipient of that shipment. Bill Harsell and I purchased them at a cost of \$3.50 per pair. They were sold as *Pterolebias elegans*. It was not until June of 1958 that I discovered the fish was misidentified—when Senhor Carvalho brought out his scientific paper on the behavior and breeding habits of *Cynolebias whitei*. The paper was shown to me and Herb Axelrod in Rio, and when we saw the spawning sequence which Senhor Carvalho had so beautifully depicted, we realized that this was the same fish that I had been breeding before our departure for Brazil.

In those earlier years it was considered a must to place collected eggs into peat moss and allow them to develop for a few months. Many species needed varying periods of dryness. If this practice was not followed many of the hatchlings would be defective, resulting in their becoming what we called “belly sliders.” Their air bladders were defective, causing them to have no buoyancy and remain at the bottom of the tank. However, I had collected in their habitat, and it seemed to me that their pools did not go through these periods of dryness. I found that they could develop in a watery state, and when hatched they would swim normally. I later used this same procedure with *constanciae* when I returned to the U.S. after re-discovering them with the help of Carlos Cruz in 1979.

White traveled widely, and the number of fishes he collected and identified is, in my eyes, remarkable. I know most of the fishes he has named, having collected in many of the same areas. I had an advantage, having studied many of these species for years, and there are now numerous papers and books available, whereas in White’s time the literature we have now did not exist. I’m sure he spent a good deal of time with Antenore Carvalho, Haraldo Travassos, and Paulo Miranda Riberio. All of these gentlemen were giants in their fields, and I’m sure their knowledge rubbed off on Major White. I felt truly privileged to have known, and collected with, these three gentlemen back in 1958.



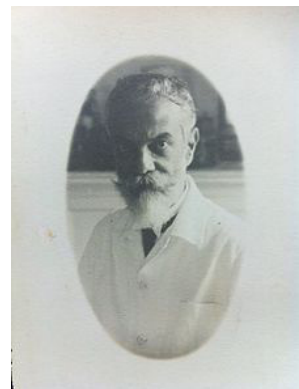
Haraldo Travassos and Antenore Carvalho. Photo taken at the National Museum in Rio (1958).



Paulo Miranda Riberio

I wrote an in-depth article for the **Journal of the American Killifish Association**, Sept/Oct 1982 issue, entitled “Natural History In Some *Cynolebias* Species.” The article described some of the species collected, and new ones discovered on a trip made in 1979. Among my many slides of habitats and fishes, I had a photo of the actual pond where White discovered *C. constanciae*. It was pointed out to me by Antenore Carvalho, who had collected with White, as well as with Myers, in the early 1940s. I really felt honored to have collected with Carvalho, as he was a remarkable scientist.

Carvalho, in his younger years, had been a pilot for the Maritime Service. He became interested in amphibians, insects, and fishes, and began to immerse himself in hands-on study. He discovered a number of species in each of these fields of interest, and has several species in each group named for him. The recipient of a Guggenheim scholarship, he studied with Dr. George Myers at Stanford for two years. His principal mentors were Myers and Alipio de Miranda-Ribeiro, the father of Paulo Miranda Riberio. (Paulo mentioned to me in 1958 that his father had corresponded with many scientists, including Albert Einstein.) Alipio was truly a trailblazer in Brazilian science, and had been instrumental in making the National Museum in Rio an important institution.



Alípio de Miranda-Ribeiro
Photo from Wikipedia



Drawings by Mrs. Constance White

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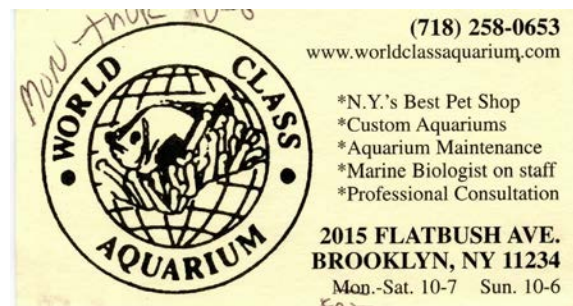
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2015 Modern Aquarium Article Index

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GCAS Happenings

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Meeting times and locations of some of the aquarium societies in the Metropolitan New York City area:

GREATER CITY AQUARIUM SOCIETY

Next Meeting: April 6, 2016

Speaker: Thomas Keegan

Topic: *Ponds*

Meets: The first Wednesday of the month (except January & February) at 7:30pm:

Queens Botanical Garden

43-50 Main Street - Flushing, NY

Contact: Dan Radebaugh (347) 866-1107

Email: gcas@earthlink.net

Website: <http://www.greatercity.org>

BIG APPLE GUPPY CLUB

Meets: Last Tuesday each month (except Jan, Feb, July, and August) at 7:30-10:00pm.

Alley Pond Environmental Ctr.: 228-06 Northern Blvd.

Contact: Donald Curtin (718) 631-0538

BROOKLYN AQUARIUM SOCIETY

Next Meeting: March 11, 2016

Speaker: Sal Silvestri

Topic: *Breeding and Maintaining Dwarf Cichlids*

Meets: 2nd Friday of the month (except July and August) at 7:30pm:

NY Aquarium - Education Hall, Brooklyn, NY

Call: BAS Events Hotline: (718) 837-4455

Website: <http://www.brooklynaquariumsociety.org>

LONG ISLAND AQUARIUM SOCIETY

Next Meeting: March 18, 2016

Speaker: TBA

Topic: *TBA*

Meets: 3rd Fridays (except July and August) 8:00pm.

Room 120 in Endeavor Hall on the State University at Stony Brook Campus, Stony Brook, NY

Email: Margaret Peterson - president@lisonline.org

Website: <http://lisonline.org/>

EAST COAST GUPPY ASSOCIATION

Meets: 2nd Tuesday of each month at 8:00 pm.

Alley Pond Environmental Ctr.: 228-06 Northern Blvd.

Contact: Gene Baudier (631) 345-6399

NASSAU COUNTY AQUARIUM SOCIETY

Next Meeting: March 8, 2016

Speaker: TBA

Topic: *TBA*

Meets: 2nd Tuesday of the month (except July and August) at 7:30 PM

Molloy College - Kellenberg Hall ~1000 Hempstead Ave - Rockville Centre, NY

Contact: Mike Foran (516) 798-6766

Website: <http://www.ncasweb.org>

NORTH JERSEY AQUARIUM SOCIETY

Next Meeting: March 17, 2016

Speaker: TBA

Topic: *TBA*

Meets at: Don Pepe's Restaurant

Contact: NJAS Hotline at (732) 332-1392

Email: tcoletti@obius.jnj.com

Website: <http://www.njas.net/>

NORWALK AQUARIUM SOCIETY

Next Meeting: March 17, 2016

Speaker: TBA

Topic: *TBA*

Meets: 8:00 P.M. - 3rd Thursday of each month except for July & December at: Earthplace - the Nature Discovery Center - Westport, CT

Contact: Sal Silvestri

Call our toll free number (866) 219-4NAS

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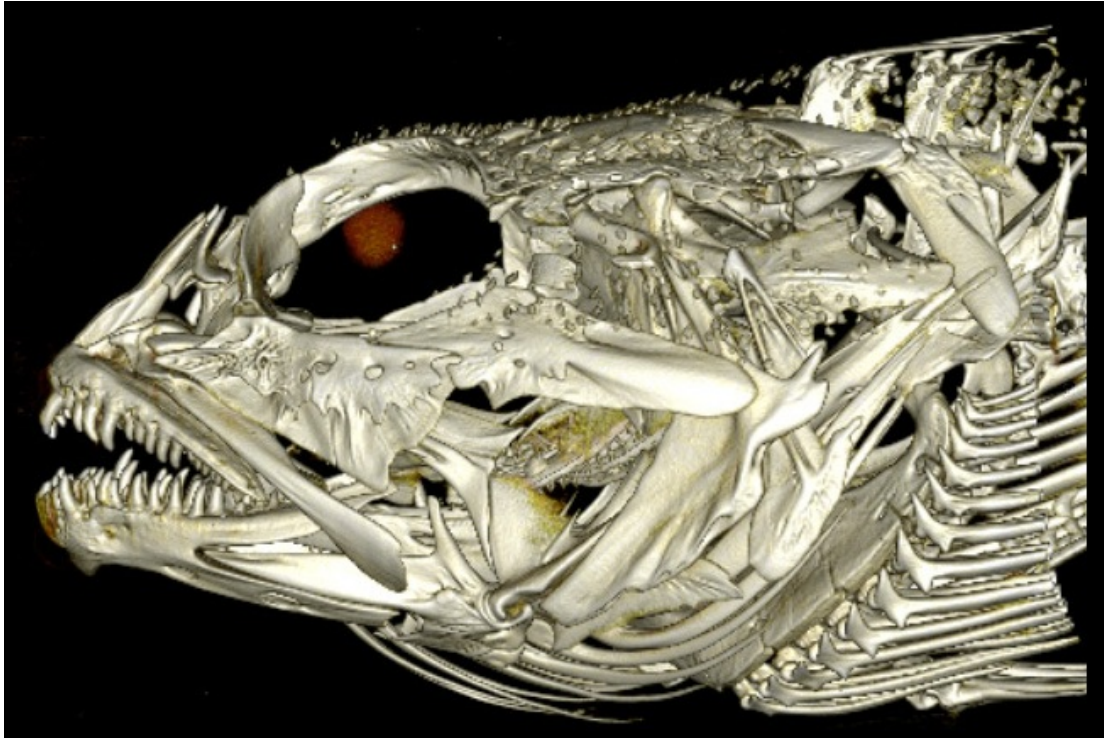
Printing Bones

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.

Currently, a scientist who wants to compare notes against a type specimen has to work from 2D pictures or risk breaking something. But, with a digitized model and a 3-D printer, they can do more detailed research without risk of damage.

Summers currently has about 40 species uploaded to his Open Science Framework site.² A single scan can be up to 30 gigabytes, which is great if you're a researcher counting articulation points on a modified pelvic fin.



Scalyhead sculpin (*Artedius harringtoni*)

Adam Summers, a professor of comparative biomechanics at the University of Washington's Friday Harbor Labs, is using a Computed Tomography (CT) scanner to visualize 3-D skeletal maps of fish. This helps ichthyologists to resolve esoteric taxonomy arguments.¹

With a 3-D printer, he can enlarge his digital models into physical models. His methods could change the way scientists learn about these fishes. Every catalogued species has what's called a type specimen, a preserved reference point against which all other members of the species are measured.

But Summers also uploads smaller files—on the order of 130 megabytes or so—so laypeople can have fun too. "The cool thing is, you don't have to ask permission, it's all open source," he says.

If Summers gets his wish, anybody with the bandwidth will be able to access any of the 25,000 species of fish. "It's no huge ambition, I just want to scan every fish," he says, "Gotta catch 'em all."

I wonder if this will help me identify the "unidentified" skeleton I sometimes find in my community tanks?



References

¹<http://www.wired.com/2016/01/print-an-army-of-giant-articulated-fish-from-this-3-d-database/>

²<https://osf.io/ecmz4/>

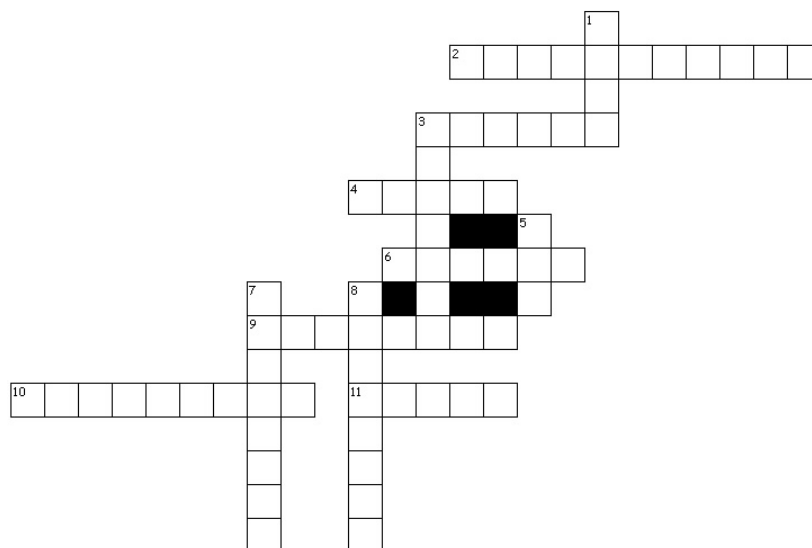


Fin Fun



Reading the **FINE PRINT**

Have you ever looked at the ingredients on a can of fish food? The crossword below consists of ingredients I found on the labels of some of my own fish food containers.



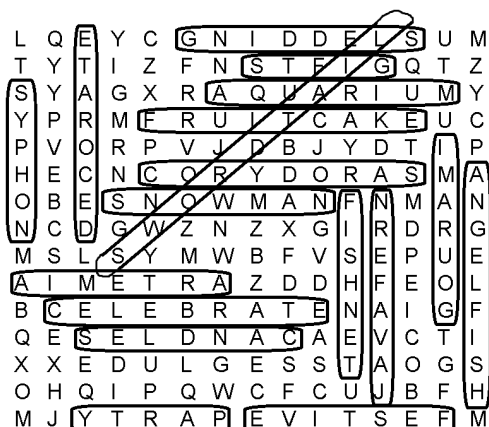
Across

2. Artemia
3. Decapod crustaceans (or something small)
4. Small crustaceans of the order Euphausiacea
6. A **human** food fish, famous for leaping
9. Fatty substance in animal and plant tissue
10. A type of blue-green algae
11. Often the result of too much light or food

Down

1. Leafy green ocean plant
3. Popeye the Sailor's food
5. A protein derived from a bean
7. Microscopic organisms that float freely with oceanic currents and in other bodies of water
8. A, B, C, D, E, etc.

Solution to our last puzzle **FESTIVE FISH**:



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NORTHEAST LIVEBEARER ASSOC.

Guest Speaker: Bill Gill (ME)

NEW ENGLAND CICHLID ASSOCIATION

Guest Speaker: Lawrence Kent (WA)

NORTHEAST FISH TUBBERS & WATER GARDENERS

Moderator: Ted Coletti (NJ) + pond plant auction!

SOUTHERN NEW ENGLAND KILLIFISH ASSOCIATION

Mini Auction of rare and uncommon killis!



Modern
renovated
hotel with
exquisite
guest rooms
& amenities!

NEC IGEEES GUPPY SHOW!



IGEEES



NEARBY ATTRACTIONS: Dinosaur State Park,
Mark Twain House, Wadsworth Art Museum!

REGISTER & SCHEDULE INFORMATION:
www.northeastcouncil.org



CELEBRATE THE NEC DIAMOND ANNIVERSARY: 60 YEARS OF SERVICE TO THE HOBBY!

