

modern AQUARIUM



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number 3

Greater City Aquarium Society - New York



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Series III Vol. XXIII, No. 3 May, 2016

ON THE COVER

Our Fishy Friends Facebook page has lately been sporting some really nice catfish photos. This one, by Ruben Lugo, is of *Rineloricaria (Hemiloricaria) parva*—along with some of the kids. To see more photos from Fishy Friends, take a look on page 25.

Photo by Ruben Lugo

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From the Editor

by Dan Radebaugh

Not surprisingly, the NEC's recent convention substantially influences this month's issue of **Modern Aquarium**. Jules Birnbaum has an article describing his experience at this convention—see “How to Recharge Your Batteries!” on page 9. On page 13 you'll find a list of the winners in the 2015 NEC Articles Competition, in which we (**Modern Aquarium**) once again made a decent showing. My congratulations to our award-winning contributors Steve Sica, Al Priest, and Lauren Ramroop!

The NEC influence continues with Leslie Dick's article, “What the Heck is an ESU?” (page 15), a CARES-related article, reprinted from a recent NEC Bulletin.

I'm happy to report that Rosario LaCorte got his computer problems sorted out, and returns this month with Chapter 22 of **An Aquarist's Journey**. I know we had some disappointed readers last month, so here we are, back on track!

Elsewhere in this issue, Sue Priest provides us with “Pictures from Last Month's Meeting,” and our Fishy Friends' page is once again a stunning array of photos. The Undergravel Reporter tells us about “Sleeping With The Fishes,” and the issue ends with our Fin Fun puzzle, this month entitled “Roots or Rhizomes.”

With regard to our ongoing project to put all of **Modern Aquarium** Series III online, by the time you read this you should also be able to read all of our issues going back to 1996. I've been doing more scanning and file concatenation than reading, but there are so many good articles that I sometimes just have to stop and read one!



Speaking of articles, we need articles! We *always* need articles! **Modern Aquarium** is produced by and for the members of Greater City Aquarium Society. Our members are our authors, and with ten issues per year, we need a lot of articles.

So share your experience with us. Write about your successes! Maybe even mention some of your failures—sometimes those are 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* have an article, photo, or drawing that you'd like to submit for inclusion in **Modern Aquarium**, it's easy to do! 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>Fishes of the Maya!</i>
July 6	TBA <i>TBA</i>
August 3	Silent Auction
September 7	TBA <i>TBA</i>
October 5	Mark Duffill <i>Loaches</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

Just a few weeks ago, the NEC (Northeast Council of Aquarium Societies) held its annual convention in Hartford, Connecticut, and several Greater City members, including Marsha and myself, were in attendance. Most of us were there as 'civilians,' but Leslie Dick, Joe Ferdenzi, Warren Feuer, Artie Platt, and Barbara Romeo played substantial roles in the proceedings. It was a well-organized, well-attended, and thoroughly worthwhile few days. For those of you who may not have attended a fish convention before, I highly recommend going to one. It's well worth tearing yourself away from your routines for a couple of days!

Next month, as has been customary for the past several years, we will pass around nomination forms for positions on our Board of Governors. The forms are for nominating either some other member whom you believe will make a positive contribution to our club, or if you would like to make an important contribution—and believe me, your time spent helping out on running this club is truly important to us—please do consider nominating yourself!

One of the open positions this year will be the office of President. I took over in this capacity back in 2009, and, like that other guy whose tenure has run concurrent to mine, I think eight years is about enough of a good thing. Those of you who were around back then will recall that we were all worried about the state of the economy, and what that might mean for our members, and for our membership (and it *was* quite tough for some of us), but we made it through OK, and the club's finances have remained sound. Many thanks here to our former and current Treasurers, and to all of our of our auction donors, sponsors, and speakers. Thanks also to the rest of our Board, without whom all the things that make this a worthwhile place to come on the first Wednesday of every (well, *almost* every) month simply would not happen.

So as you look over your ballots next month, please give serious consideration to what *you* might do to help out, and think about who might be a good choice to take over as President. If you think you'd like to give it a shot, throw your hat in the ring! If you think of someone else who might be good at the job, write in *their* name, and talk to them about it!

Dan



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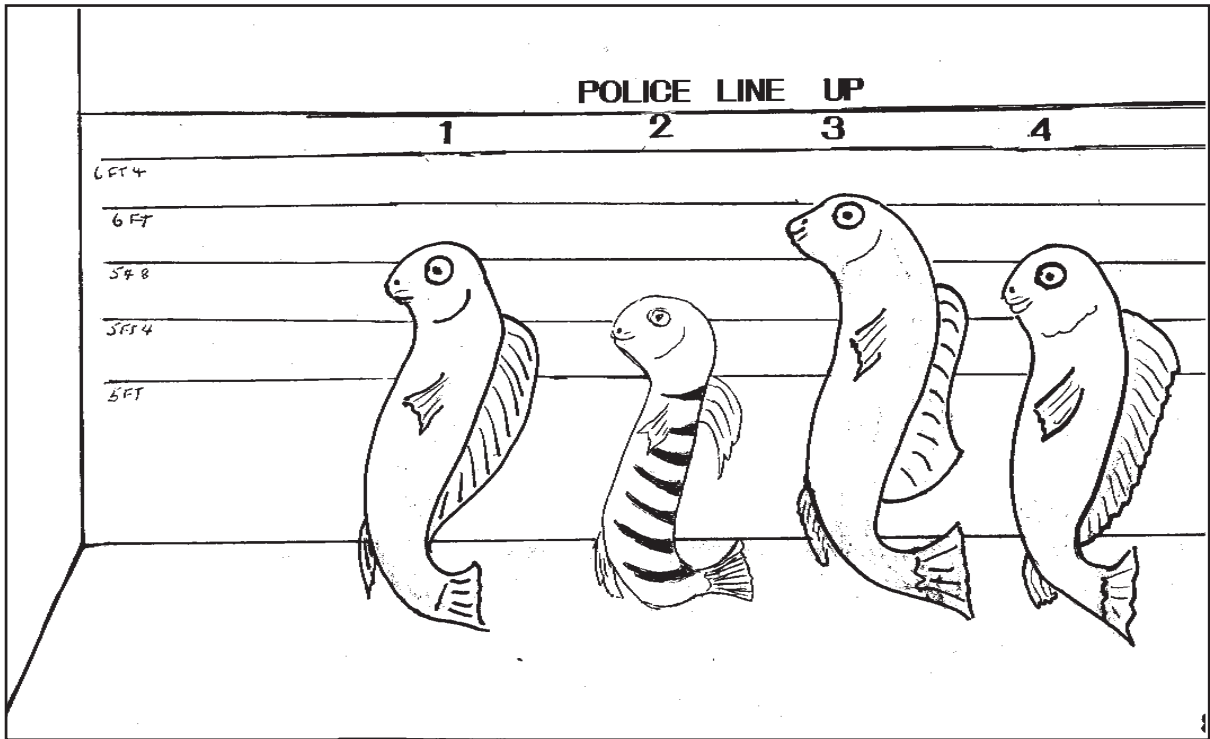
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March's Caption Winner: Denver Lettman



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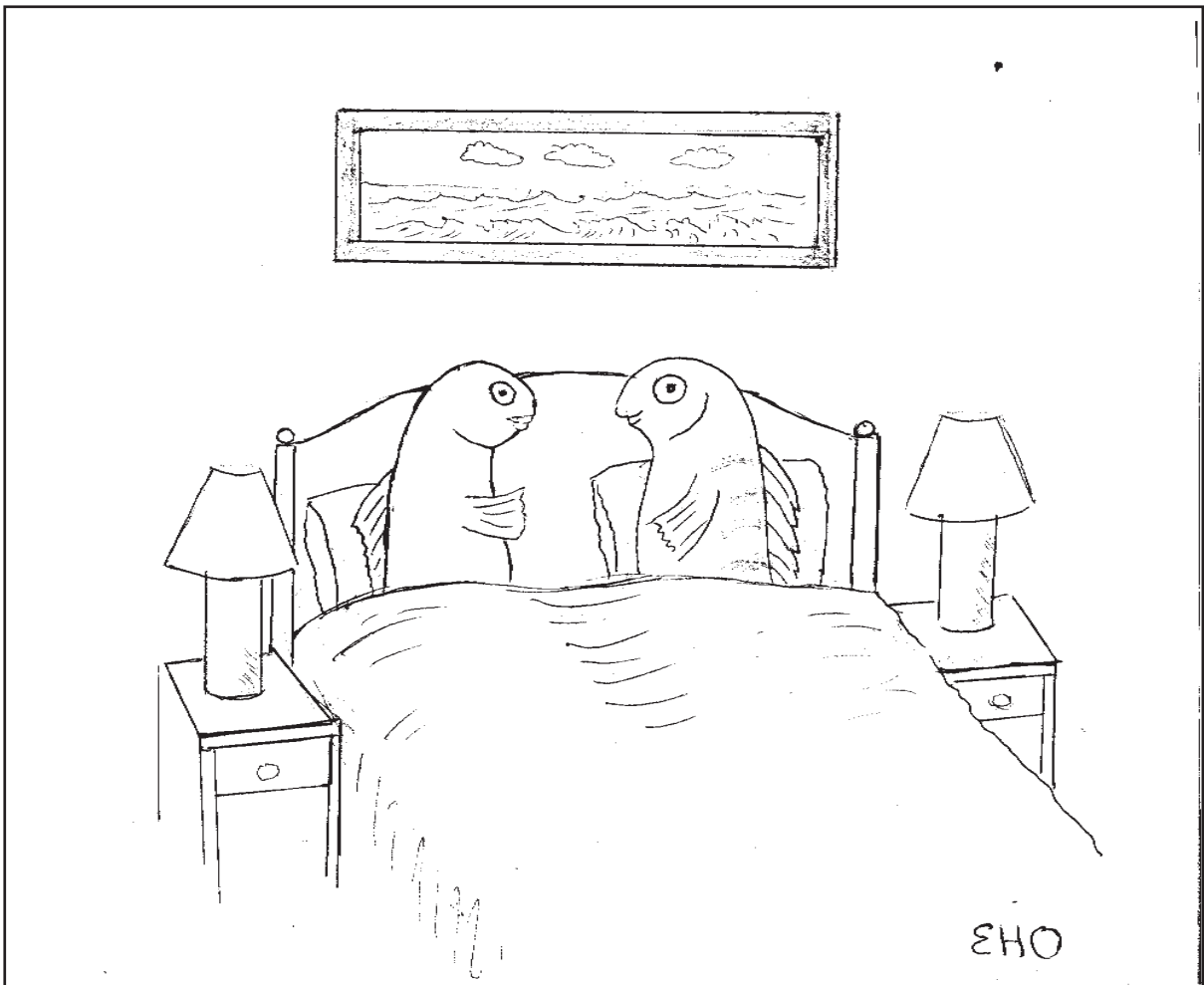
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The Modern Aquarium Cartoon Caption Contest

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!



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HOW TO RECHARGE YOUR BATTERIES!

by Jules Birnbaum

The NEC (NorthEast Council of Aquarium Societies) held its 41st annual convention the weekend of April 8th-10th, marking the 60th anniversary of this organization, of which GCAS is a member club. There are 29 member clubs in this group. Leslie Dick, (also a member of Greater City) and the rest of the volunteers did a great job. Keep in mind no one gets a dime for all the work they do!

During my career in life insurance sales, I attended over 30 conventions run by pros, so I was not enthusiastic about attending a convention run by "amateurs." However, one of my fellow GCAS members urged me to consider attending. So, "Try it, you'll like it," I did. And I did!

I decided to register and then decide later whether to attend. I got a little push when Joe Ferdenzi said that he and his wife Anita would be attending, and driving up to Rocky Hill, Connecticut, where the convention was being held. They were even gracious enough to offer to give me a ride.

The drive up took only a little over two hours. My granddaughter is attending college near there. In fact she came over for lunch on Saturday, and I introduced her to everyone. Alex was once on the cover of a **Modern Aquarium**, and has been credited with several pictures that have appeared in the magazine.

When we arrived I found the Sheraton Hotel lovely, and was given a quiet room (I had asked for it to be far away from noisy halls). Of course I lost three pounds because I had to walk 10 miles back and forth to the elevator. The hotel did a great job making us feel comfortable. I was especially impressed with the employees, who made us feel so important.



My granddaughter Alexandra Horton, visiting from her nearby college.

To my surprise, the check-in at both the hotel and the convention were swift and efficient. We were given an envelope with everything we would need, including name tags with the entire convention program printed on the back.

On Friday night we had an opening dinner, and our own Joe Ferdenzi was the opening speaker of the event. His topic was the history of our hobby in the USA, and although most of us Greater City members have heard his presentation, this one was different enough to go over big with the well over 100 people in attendance.

There were presentations all weekend by a number of speakers, and you could pick which ones would be of interest. There was Ian Harrison, Ph.D., a GIS expert for the Congo Project. Then came Dr. Paul V. Loiselle, Stephan Tanner, Ph.D., Dr. John Lyons, Lawrence Kent, and our own Joe Ferdenzi. Where else could you hear all these giants of our hobby

speak in one place? A number of presentations dealt with the environmental and conservation problems in South America and Africa. It is sad to see what is going on in areas from which the hobby gets its fish.

A large vendors' room was set up where you could purchase fish, equipment, fish food, plants, driftwood, and books—some at discounted convention prices. For example, ZooMed had LED lights at a large discount. Your Fish Stuff (YFS) had every kind of flake and pellet food. A Long Island breeder and importer had many corys and plecos for sale. I bought eight *schwartzi* at a bargain price. One of our other members bought a whole tank of another variety of cory from this vendor. There was also a silent auction in the vendors' room, with many small tanks of fry.



Joe Ferdenzi, auctioneer at the huge Sunday auction.



Ron Finlayson and his 9 year old grandson Roman standing next to a vintage 50 gallon stainless steel aquarium that was auctioned on Sunday.
Photo by Joe Ferdenzi.



Guppy Show with many small tanks containing show pairs.



Hundreds of bags ready for the auction.



Frank Greco and Steve Abrams with tanks with fish for sale in the vender's hall.



A trophy that the NEC used to award to the most outstanding member society back in the early 1960s. The first recipient was the now-defunct Queens County Aquarium Society. Photo by Joe Ferdenzi



**Jules Birnbaum with Mr. & Mrs. Larry Whitfield.
Photo by Barbara Romeo.**



**Jules Birnbaum with Mr. & Mrs. Joe Ferdenzi.
Photo by Barbara Romeo.**



One of the vendors brought some spectacular tropical frogs. Photo by Larry D. Whitfield

In another room there were a cichlid show and a guppy show. The guppy show had 100 small tanks, with pairs of the most beautiful guppies I have ever seen. It was under the aegis of The International Guppy Education and Exhibition Society.

Those people worked so hard to get all of the many cichlid and guppy tanks going. Although there were beautiful cichlids, I'm sure some of our members could have done very well with their fish. Some of these prized fish were then placed in the Sunday auction.

There was a buffet dinner Friday night, and a banquet on Saturday. The banquet included an awards presentation, and all the prior winners of the top awards who are still with us and attending the event were honored. Awards were also presented for articles from member clubs' publications. There were also awards given for photography. I did not win anything, but enjoyed participating.

Our club was well represented; I counted ten members from GCAS, including 3 wives. Attendance kept growing during the weekend, and peaked during the giant auction on Sunday, including an additional five GCAS members who came up to find some rare fish. I saw several bags near their seats, so I know they got at least some of what they wanted.

The auction was huge, and because of its size started early—around 11:30, and when we left for home after 3 PM it was still going strong. I was later told that it ended at 6 PM. I can't begin to tell you all the names of the fish made available there that you just don't see in pet shops, or even our great GCAS auctions. Naturally there were plenty of discus and angels, but there were *many* other unusual cichlids and livebearers. The corys and plecos in particular were well represented. There were also loads of equipment in the auction. One item was a vintage 50 gallon chrome tank with the original light and stand. The original label was still on the front! I believe it went for \$70, which was a bargain! If I had had an SUV or van, that tank would now be in my home. It is also worth mentioning there was a killifish auction late Friday night, at which the sellers received 100% of the proceeds.

People traveled far and wide to get a crack at all the great looking, rare fish. For example, I had dinner with a man who flew up from North Carolina. A portion of the proceeds of the auction went to a conservation organization. These rare fish, with no tax or shipping, brought people with pockets-full of cash.



Dan & Marsha Radebaugh, with Jerry O'Farrell. Photo by Larry D. Whitfield

The bidding was fierce, especially at the beginning. I must give special credit to the auctioneers. Joe Ferdenzi was called upon, and spent a couple of hours in that role.

My first NEC convention was a great success, and when I came home with all my purchases I slept eight hours Sunday night. On Monday I had a renewed enthusiasm for this hobby. If

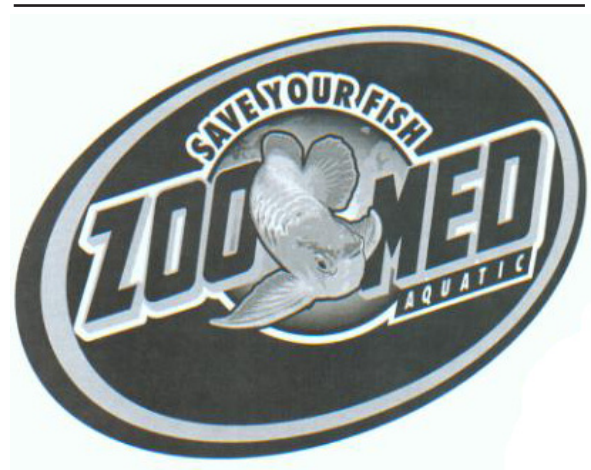


Leslie Dick and Barbara Romeo. Photo by Linda Giza.

you are a serious enough aquarist to be a member of GCAS, then I highly recommend the short trip to the next NEC convention. It can be a mini vacation, you will learn something new, meet some nice people, and even come home with a few rare fish at bargain prices. I highly recommend you attend next year—I'm sure it will recharge your batteries!



Photos by the author unless noted.



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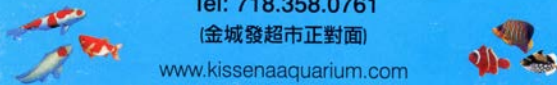
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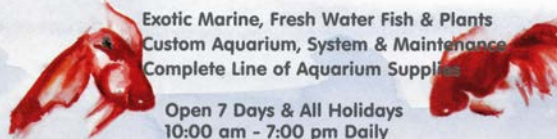


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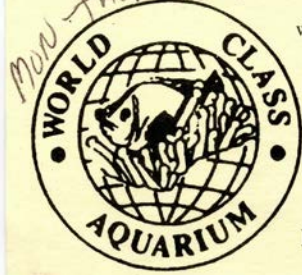


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The NEC 2015

Articles Competition

Humor

- | | | |
|-------------------------------------|---------------|--------------------|
| 1. Cats and the Aquarium Enthusiast | Barbara Romeo | DAAS [‡] |
| 2. A Fish Named BO | Judy Weinberg | NECA ^{††} |
| 3. Oscar Files part 3 | Basil Holubis | NAS ^{**} |

Junior

- | | | |
|-----------------------|--------------------|-------|
| 1. My Aquarium | Joseph Pacheco Jr. | ACLC* |
| 2. My Fish Tank Story | Joseph Pacheco Jr. | ACLC* |
| 3. Angel and Betta | Lauren Ramroop | GCAS |

Breeding

- | | | |
|--|---------------------|---------------------|
| 1. Spawning the Pretty Tetra <i>Hemigrammus pulcher</i> | Fred Allen | ACLC* |
| 2. Breeding and Maintaining <i>Nannostomus rubrocaudatus</i> – the Purple Pencilfish | Sal Silvestri | NAS ^{**} |
| 3. <i>Cryptoheros nanoluteus</i> , the Golden Convict | David L. Banks, Jr. | TFCB ^{***} |

Open Class

- | | | |
|--|------------------|----------------------|
| 1. Terrors of the Planted Aquarium | John Todaro | BASNY ^{†††} |
| 2. Easy Rider and the Foureye Butterfly Fish | Stephen Sica | GCAS |
| 3. The Fish of Many Morphs | Alexander Priest | GCAS |

Continuing Columns

- | | | |
|---|-------------------|----------------------|
| 1. Piscatorial Pearls: Reviewing Aquarium Society Newsletters from Around the World | Kurt Johnston | ACLC* |
| 2. The View...from the Other Side of the Tank, My Piece of the Ocean, Mine Know Me | Margaret Peterson | LIAS [±] |
| 3. Scrumptious Meals & Live Food Treats | John Todaro | BASNY ^{†††} |

* Aquarium Club of Lancaster County

** Norwalk Aquarium Society

*** Tropical Fish Club of Burlington

‡ Danbury Area Aquarium Society

†† New England Cichlid Association

††† Brooklyn Aquarium Society

± Long Island Aquarium Society

Congratulations also go to Joe Gurrado for his 2nd Place award in the NEC Photo Contest, Class 4- Underwater Life (Group or Tank Photos) – Open Class.

Pictures From Our Last Meeting

Photos by Susan Priest



Many thanks to Thomas Keegan for bringing us his excellent program on "Ponds."



I wonder what Roger Brewster and Steve Chen have in those cups?



Ed Vukich announces "SOLD!" to the disembodied hand in the back row.

Bowl Show Winners:



2nd Place: Rich Waizman

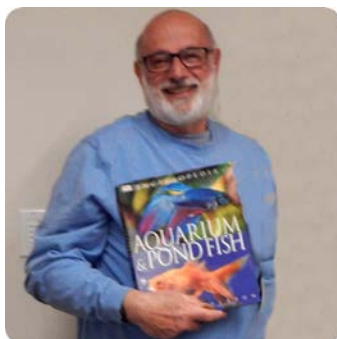


1st Place: Bill Amely



3rd Place: Bill Amely

Door Prize Winner:



Steve Sica

What the Heck is an ESU?

by Leslie B. Dick



The sub-family Goodeinae, comprised of some 40 species and about 80 distinct populations, is endemic to Mexico, and nearly are all at risk in the wild. Each of these distinct populations has been geographically separated from one another for, in some cases, thousands of years. As a result, each has likely evolved with its own unique set of genetic characteristics. Some species of goodeids have quite a few known distinct populations, and it is important to keep them separated in captive breeding programs to prevent possible hybridization. Should two distinct populations of the same species be housed together, hybridization could occur. The resulting offspring may lose the unique genetic characteristics of their parents, leaving what is known as “aquarium strain” fish.

This is where ESUs come into play. Dr. John Lyons, the Chairman of the North American Goodeid Working Group (NAGWG), received his Ph.D. in Zoology with an emphasis on fish ecology and ichthyology from the University of Wisconsin-Madison, and has been involved in conservation efforts of goodeids since 1986. At the second annual

meeting of the NAGWG, held at a recent American Livebearer Association convention, John introduced “Evolutionarily Significant Units,” or ESUs, the technical term for genetically distinct populations of evolutionary and conservation significance, as a method to maintain and track known goodeid diversity.

Let’s take a look at how ESUs work. Please

note that the charts used in this article are abstracted from Lyons’ spreadsheet; general information for each genus is in the yellow rows, while ESU numbers and location information for each population are in the gray rows. ESU codes are based on a formula that has the first three letters as an abbreviation of the genus name and the last two letters as an abbreviation of the species

name, followed by a number for the particular species or ESU. For some species there is only one known population. *Ameca splendens* is one of the most well-known goodeid species. The current species number is 13, the current ESU number is 20, and the location information is identical for the species and the ESU.

With another popular goodeid, *Xenotoca eiseni*, (photo below) there is 1 species with 5 distinct



Ameca splendens (Butterfly Splitfin).
Photo from Fishbase.org

Count	Genus	Species	Code	Basin(s)	Waters
13	<i>Ameca</i>	<i>splendens</i>	Amesp0	Ameca, Magdalena, Sayula	Manantial and Rio Teuchitlan, Rio Ameca, Presa La Vega, Manantial Almoloya, Tanque El Molino, Cuyacapan, Sayula
20	<i>Ameca</i>	<i>splendens</i>	Amesp1	Ameca	Manantial and Rio Teuchitlan, Rio Ameca, Presa La Vega, Manantial Almoloya, Tanque El Molino, Cuyacapan, Sayula

populations. Here, the current species number is 34, the current population ESUs are 62 through 66. Note that the population locations are unique to the ESUs.

These species are quite straightforward. There are several goodeid species where there is 1 species number, in this case number 16, and the genus name is the same, but the species names are different, such as with *Chapalichthys pardalis*, current ESU 23. *Chapalichthys pardalis* is only found in Manantial Tocombo, while *C. peraticus*, current ESU 24, is only found in Presa San Juanico.



Xenotoca eiseni — Photo by Marie France Janelle

This article previously appeared in the January 2016 NEC Bulletin. It was originally published in Flare Magazine 49; 2 (Sep-Nov) 2015.

Count	Genus	Species	Code	Basin(s)	Waters
34	<i>Xenotoca</i>	<i>eiseni</i>	Xenei0	Santiago, Coahuayana, Armeria	See ESU's
62	<i>Xenotoca</i>	<i>eiseni</i>	Xenei1	Santiago	Manantial 6 de enero, Manantial el Sacristan, Rio Santiago
63	<i>Xenotoca</i>	<i>eiseni</i>	Xenei2	Compostela	Rio Compostela
64	<i>Xenotoca</i>	<i>eiseni</i>	Xenei3	Coahuayana	Rio Tamazula
65	<i>Xenotoca</i>	<i>eiseni</i>	Xenei4	Armeria	Rio Ayuquila
66	<i>Xenotoca</i>	<i>eiseni</i> (cf. <i>eiseni</i>)	Xenei5	Ameca, Magdalena	Rio San Marcos, Granja Sahuaripa, Etzatlán, Laguna Palo Verde, Manantial Almoloya, Manantial El Tanque, Rio Caliente
16	<i>Chapalichthys</i>	<i>pardalis</i>	Chapa0	Balsas	See ESU's
23	<i>Chapalichthys</i>	<i>pardalis</i>	Chapa1	Balsas	Manantial Tocumbo
24	<i>Chapalichthys</i>	<i>pardalis</i> (<i>peraticus</i>)	Chapa2	Balsas	Presa San Juanico

If we look at *Characodon*, the information is even more complicated. We find there are 2 species (*Characodon audax* and *C. lateralis*) with current species number 17 and 9 known populations with current ESU numbers 25 through 33.

The *Characodon* known as “The Black Prince” is referred to as *Characodon audax* ‘El Toboso’ and is the only *C. audax* species recognized by Lyons. There are other populations known from a single location that some have also termed as *C. audax*, but Lyons feels that until the genus undergoes a detailed taxonomic revision, these populations should be called *C. lateralis*, for example *Characodon lateralis* ‘Los Pinos’ or *C. lateralis* ‘Puente Pino Suarez’. Those with multiple locations with the same ESU numbers (looking at ESU 28 as an example) are similarly written as *C. lateralis* ‘Guadalupe Aquilera’ or *C. lateralis* ‘Laguna Seca’ based on the location where they have the largest abundance. Two populations that have always been referred to as *C. lateralis* (ESUs 32

and 33) are now also referred to as populations, such as *C. lateralis* ‘Armado Nervo’.

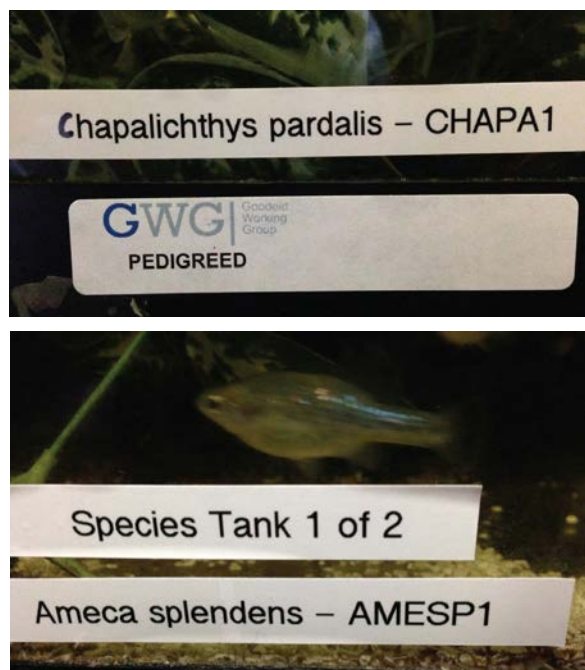
To further complicate matters, as new distinct populations of species are added to this comprehensive spreadsheet, the ESU numbers change. Remember that I referred to “current ESU number”? At one time, there were just 3 known populations of *Xenotoca eiseni*, while now there are 5. There were once 5 known populations of *Characodon lateralis*, and now there are 8. When these new ESUs are added, they are added in numerical order, so those ESU numbers below these additions receive a new ESU number.

How is one to keep track of a specific population of a species if the ESU numbers don’t remain the same? Fortunately, the answer is quite simple -- the code associated with each population remains the same, so *Xenotoca eiseni* ‘Rio Tamazula’ will always be known as Xenei3, regardless of what is listed as its ESU number.

Count	Genus	Species	Code	Basin(s)	Waters
64	<i>Xenotoca</i>	<i>eiseni</i>	Xenei3	Coahuayana	Rio Tamazula

Count	Genus	Species	Code	Basin(s)	Waters
17	Characodon	audax	Chrau0	Mezquital	El Toboso
25	<i>Characodon</i>	<i>audax</i>	Chrau1	Mezquital	El Toboso
18	Characodon	lateralis	Chrla0	Mezquital	See ESU's
26	<i>Characodon</i>	<i>lateralis (audax)</i>	Chrla1	Mezquital	Cerro Gordo, Manantial El Carmen, Arroyo San Rafael
27	<i>Characodon</i>	<i>lateralis (audax)</i>	Chrla2	Mezquital	Los Pinos
28	<i>Characodon</i>	<i>lateralis (audax)</i>	Chrla3	Mezquital	Presa Penon del Aguila, Rio Mezquital, Guadalupe Aquilera, Laguna Seca, Aguada de las Mujeres
29	<i>Characodon</i>	<i>lateralis (audax)</i>	Chrla4	Mezquital	Hot Springs, Presa Tunal, Rio Saceda, San Vincente de los Chupaderos
30	<i>Characodon</i>	<i>lateralis (audax)</i>	Chrla5	Mezquital	Abraham Gonzales, Ojo Garabato, 27 de Noviembre
31	<i>Characodon</i>	<i>lateralis (audax)</i>	Chrla6	Mezquital	Puente Pino Suarez
32	<i>Characodon</i>	<i>lateralis</i>	Chrla7	Mezquital	Ojo de Agua de San Juan, Los Berros, Ojo de Nombre de Dios, La Constanca
33	<i>Characodon</i>	<i>lateralis</i>	Chrla8	Mezquital	Amado Nervo

How do I keep track of known populations of goodeids? In my fishroom I label each tank of goodeids with the genus and species name, when and from whom I received each group, and label each tank with the species name and its associated code. I obtain goodeids from known breeders, usually fellow members of the NAGWG, who also maintain detailed records on their colonies. Below are examples of species and ESU code numbers for two of the goodeids under my care:



Should one purchase goodeids either online or at club auctions, look for specific information, such as population location and breeder's name. Without this

information, the fish should be considered "aquarium strain" and maintained in their own aquarium until such time as you can backtrack through previous owners of these fish to determine if they came from a known population, and haven't been mixed with other populations while in captivity.

With the uncertain future of all species of goodeids in the wild, captive breeding programs such as those with members of the NAGWG, the ALA's Species Maintenance Program, and the CARES Priority List will help ensure their continued existence.

The detailed information contained in the ESU spreadsheet, if used appropriately, will help ensure that unique known populations of goodeids will be maintained with all their genetic diversity intact.

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AN AQUARIST'S JOURNEY

Story and Photos (unless noted) by Rosario LaCorte

Chapter 22

The mid-1980s was a stressful time for our family, as my mother's health was deteriorating. She lived next to us in a large duplex home. We saw to her needs and made her as comfortable as possible. My wife Jeannie was the perfect daughter-in-law—always checking on her and spending time with her while I was at work. Following a slight stroke, Jean and I were sitting up with her, knowing that the end was near. Our oldest daughter, Maryann, who was a registered nurse, returned from her shift at the hospital, and at about midnight suggested that Jeannie and I retire for the evening, while she sat with my mother.

At about 6:30 in the morning Maryann came to our bedroom and told us that Grandma had passed away, peacefully and without pain. It was a very sad occasion.

We tried to maintain the home, but it was quite large (20 rooms), and though we managed to stay there for another year, that much space was just too expensive to maintain and (especially) heat. At that time the Western nations were at the mercy of OPEC, and many families had to make difficult decisions in the face of rapidly rising costs.

At about this same time, my older brother Joe came down with lymphoma, which was quite a shock to us all. Joe had founded the Monroe Pattern Works in 1946, and developed it into a successful business. After my military service Joe asked me to come into the trade. It was a five-year apprenticeship, and I eventually worked there for 44 years. It was very hard, watching Joe deteriorate. He was a very talented man. A fantastic artist as well as a mechanical genius, he was always being sought out in the profession for guidance on difficult projects. He passed away in 1985 at the age of 63, with many accomplishments yet to fulfill. I still think of him often.

One of our neighbors expressed interest in the home, and within three weeks we came to an agreement. Now the fish house became a huge question mark. I certainly did not want to give it up, but where would

I find a place to accommodate the whole setup? How far would I have to go? Well, we finally found our present home, which sat on close to an acre, but still did not have the space to accommodate everything. There were 200 aquariums, and it became obvious that a drastic reduction in that number would be required. I drew up a floor plan, and designed the projected new racks. I had the necessary lumber delivered to Monroe Pattern, so that I could work on building the racks on the weekends. All the lumber was cut, notched, pre-drilled and marked to simplify assembly.

The actual assembly was easy. The big problem

facing me was the massive undertaking of moving all the aquariums and fish. My old home was five miles east from work, and the new home was 10 miles west from work. That daily 15-mile trek became exhausting and nerve-racking. I would pack a Styrofoam box with ice packs and frozen foods to last the eight ours at work.

After work, I'd travel to

my old home to feed all the stock and remove a few tanks and fish to the new home. Then, after supper, I'd retreat to the basement to arrange the new setup. This routine went on for a long time, and I was on the verge of throwing in the towel. It really wasn't fair to Jeannie, but she was always at my side with encouragement, saying "If you give up now, the world will not believe it."

At last, the day arrived when the garage was finally emptied. My two boys who were still at home had been a tremendous help, and we were at last able to close the door of the old fish house and truly begin a new chapter.

I still had a problem. The basement needed a heat source. I had a plumber friend who came by to give me an estimate on adding baseboard heating. His estimate of \$3,500 was crushing, and I thought this would be the end of the whole project. My closest neighbor at that time was George Fear, who was also a member of the North Jersey Aquarium Society, and a good friend. George had had a similar setup at his home, but had



Photo from the Potomac Valley Banquet Nov. 1999. From left to right: Dr. Stanley Weitzman, Dave Schnell, Don Kinyon, and Rosario LaCorte.

shut down his fishroom when he founded an import wholesale company. George offered to give me all of his baseboard radiators, which had been disassembled when he went into the wholesale business. Not only was George generous in his offering of the parts—he told me that one of his friends was a plumber, and, “let me talk to him about getting you started.”

George’s friend agreed to assemble the whole job over a week-end, and true to his word, the whole job was finished after several hours, at a cost of \$250! I was very indebted to George for his input and aid, which helped me remain in the hobby.

This house had well water, and neither Jeannie nor I, or the boys who were still at home, were pleased with the taste. It was also quite acidic, due to dissolved carbon dioxide. I lost some valuable fish species because of it. I found a water testing company in a nearby town, and after taking in a sample for testing, this lab informed me that by state law, the well situation should have been rectified before the place was sold. We were unaware of the rule, which included not only the CO₂, but also a high level of coliform bacteria. We now understood why our dog was being plagued by diarrhea. At that time our first granddaughter was six months old, and while visiting our home would play in the sink, as babies will do. Our daughter Eileen could not rationalize why, after each visit to “Grandma and Grandpa’s” she would come home sick. We now had her answer.

Some of the fish were affected as well. In particular, *Lamprichthys tanganicus* would break out with fungus. Before I discovered the extent of the water problem, I tried using sodium bicarbonate to adjust the pH. That helped, and heavy aeration (to release CO₂) when changing water helped as well. We still were not happy with the water situation though, as pressure dropped markedly if anyone else was using water—it took a while for the pump to refill the reservoir. I finally decided to change over to city water, and hired a backhoe to dig a trench from the street main to the house. Once the connection was made, I did the rest of the plumbing to eliminate the water tank and the water from the well. Finally, the water situation was dependable and stable. The city water was medium-soft, with a pH of 7.2.



Lamprichthys tanganicus

Everything now returned to normal, and I was again reproducing large numbers of species. My property was nearly a full acre, so I had plenty of room at the back, which was part of a deciduous forest. A stream called Green Brook ran through the edge of the property, and it contained blacknose dace, which I spoke of in an earlier chapter (see photo on facing page).

I once wrote an in-depth article for the FAMA magazine, entitled “Backyard Treasures,” in which I covered a number of live foods that I was able to collect to maintain a healthy diet for all my fish. I missed the old homestead, where I collected large amounts of daphnia during the summer months. The area I collected from was at the end of Newark Airport, where a vast meadowland was conducive to gathering live foods.

At length I decided to build my own daphnia pond, as I had sufficient space on the new property. I dug (by hand) a pool that was three feet deep at the center, 20 feet in length, and 15 in width. I then lined the pool with plastic sheeting to maintain a stable water level. For water, I used my sump pump discharge by connecting a 20-foot length of 1.5-inch pvc tubing to carry the water to the pool. Within two days the pool was filled to capacity.

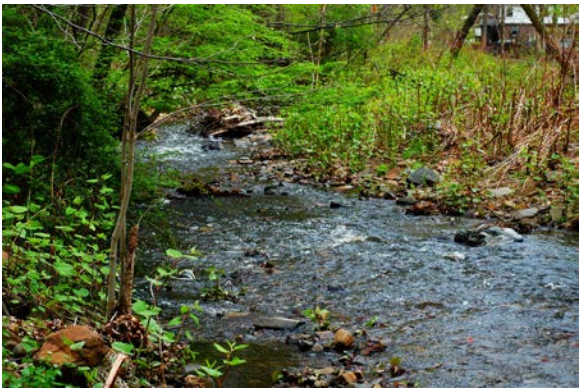
I added lime to the water to maintain alkalinity, and fertilized it with several types of organic material. I then seeded it with daphnia, and within a short period of time I was able to collect live food in my own backyard. Once fall came, and the trees began to shed leaves, I allowed a certain amount of leaves to remain in the water. It was a natural way of allowing organics to decompose and give the daphnia an ongoing food source.



Frogs found the pond and began to reproduce, destroying much of the live food I was collecting.

At about that time, blackworms had come on the scene. I actually counted out 20 individual worms to seed the pond, and the following year I was able to harvest large numbers of blackworms. The decaying leaves also attracted chironomid flies to deposit their jelly-like masses of eggs. They hatched, and are of course the larvae known in the hobby as bloodworms. They would construct a cocoon from detritus and

Continues on page 22...



Green Brook borders my property, and is spring-fed, clear water. It was blacknose dace habitat (see photo above right). I often collected green chironomid worms there. They are found under rocks, where they build their cocoons from detritus. Placed in a bucket of water these can be brushed away using a soft paint brush. During warm days they can be seen in swarms, dancing in flight in an up-and-down motion. Resembling mosquitoes slightly, they do not bite. In fact many species have no stomachs, just a very short lifespan, less than a few hours. They are only in motion to breed, lay eggs, and expire.

Mayflies hatch in huge swarms, and are a rich source of protein for fish, frogs, and even man, as the indigenous natives of the large lakes of East Africa make good use of this available food. A number of insects emerge simultaneously and form huge clouds, that have even been picked up by radar, containing trillions of them. The natives who dwell close to these lakes collect them in large nets as they sweep through the swarms in flight. I recall many years ago, watching on television, natives collecting them, then forming patties and grilling them, much as we do with hamburgers. They are referred to as Kunga. There are mayflies, chironomids, and chaoborus that are all part of the swarm. I would assume that they are tasty, as the main diet of mayflies in particular is algae. The mayflies of the African lakes are predominately *Povilla adjusta*.



Jack Freiberg (of *Aulonocara jacobfreibergi*), along with some financial supporters, opened African Imports, in Verona, N. J., I believe in the early 1970s. I frequently would visit to see what new species were being imported. On one occasion I told Jack about the swarming of these insects, and hinted that they might be a good source to feed many of our fish. My suggestion to him was to ask the collector in Africa if it would be possible to gather a large number of them and jar them, so that we could experiment with its nutritional advantage on the variety of fish that we had. It wasn't too long after, that Jack removed a jar from his refrigerator and showed me its contents. They looked great, but then Jack remarked "can't use them." The inspectors had reminded him that the insects were not allowed into the country, as they came from a foreign source, and had to be sprayed. DDT was still in use, and that eliminated the possibility to proceed with the experiment.

There are a number of places in the United States where swarms of these insects emerge with one purpose, and that is to reproduce, for many of them have no stomachs—their purpose is only reproduction. Many towns need to sweep them from the roads, as they are so numerous that the road surfaces can become



dangerously slippery. Perhaps those of you who live in these areas should consider using them as a food source for your fish. Several years ago the N.Y. Yankees/Cleveland Indians playoff game was greatly hindered by the emerging chironomids from Lake Erie. The pitchers had a tough time getting their signals and throwing strikes because of the flies getting into their eyes. Our MAKa meeting in Lyndhurst, N.J. has a similar situation, as on warm spring and summer days our cars, as well as the environmental center where we meet, are covered with chironomids.

organics. After a rainfall large numbers can be collected, as the rainfall acidifies the water, forcing many aquatic larvae to the surface, where oxygen is richer. The blackworms would gather in a ball at the surface, making collection easy. Some years were banner years, when we'd see a lot of Mayfly larvae.

When I seeded the pond with blackworms I was very careful to make sure no leeches were included in the seeding, but despite my care, it wasn't long before some made their appearance. I have never studied the life cycle of leeches, but I have observed them feeding. They will attach themselves to a worm and eventually suck the life juices from it. As an experiment, I once placed about 25 blackworms into a plastic shoebox and added two or three leeches. In a few days the blackworms were gone. This is probably why leeches can often be found with blackworm purchases. Some large characins will eat leeches.

In 1999 Seth Kolker, President of the Brooklyn Aquarium Society, contacted me to tell me that Dr. James Atz and I would be honored at a special gathering at the New York Aquarium meeting hall on October 31st. It would be called Legends of the Aquaria. Of course I was very excited about the



Rosario and Jim Atz, prior to the New York Aquarium opening. Photo by Gene Wolfsheimer, 1956.



Rosario and Jim at the Legends weekend, 57 years later. Below is plaque from the Brooklyn Aquarium Society.

honor, and especially thrilled to know that Dr. Jim Atz would be part of the special weekend. It had been 20 years since I had spent any time with him. My friend John Brill and I had attended a presentation that Atz had given at the Museum of Natural History. Dr. Atz was a real old-timer; somewhere in my collection I have a photo of Jim collecting swordtails in Mexico in the 1930s along with Dr. Myron Gordon. Dr. Gordon (1899-1959) did a lot of work studying melanomas in platy fish.

October 31 arrived, and I was humbled by the turnout, and glad to see Jim Atz after so many years. He was one of the true gentlemen in the aquatic sciences. Jim had held many positions with the New York Zoological Society. At one time he was the curator of the Department of Ichthyology at the Museum of Natural History.



Louis B. Garibaldi, Jim Atz, Rosario LaCorte, and In the background Seth Kolker, President of the Brooklyn A.S. Seth was responsible for the 1999 weekend program.



Placques from the Brooklyn Aquarium Society, and the Potomac Valley Aquarium Society.

Jim had also been part of a project that had included several prominent scientists, in a study of the Coelacanth, a living fossil from prehistoric times dating back to the Cretaceous period—about 70 million years ago. It's existence was only known about through fossil records; it was presumed to be extinct until some fishermen caught one off South Africa in 1938. This was almost equivalent to the discovery of a live dinosaur!

Ms Marjorie Courtenay Latimer's keen eye noticed it in the fishermen's catch, and she subsequently asked the boat captain to alert her whenever any more

strange catches were brought aboard. Ms Latimer brought a sketch of the strange-looking fish to the attention of the well-known ichthyologist J.L.B. Smith, who eventually described the fish and named it *Latimeria chalumnae*, after Ms Latimer. Around 1960, my good friend the late Dr. John Wourms of Clemson University, gave me the book by J.B.L. Smith recounting the entire story, talking about all the problems he had encountered with the government of South Africa, and how he eventually was able to procure a specimen. The book is called **Old Four Legs: The Story of the Coelacanth**. It's a really great read.



If you do a search of Marjorie Latimer, you can read the exchange of letters between her and Smith. Ms Latimer was curator of the East London Museum for more than 40 years; Smith was a professor of chemistry who involved himself in ichthyology. I had a correspondence with Smith in the early 1960s, when I was heavily involved with the genus *Nothobranchius*. Smith had said that he did not want to live beyond the age of 70, and on January 7, 1968, he ended his life by taking cyanide. Jim Atz told me that Smith had spent a good bit of time at the Museum of Natural History, and he came to know him very well.

The meeting for the Legends of the Aquaria included honoring Louis B. Garibaldi, the director of the New York Aquarium. The three of us each had a turn at the lectern, giving our presentations to the audience. Afterward we were presented with a beautiful plaque, which I still cherish greatly. We were then taken out to dine. We were extremely grateful to the Brooklyn Aquarium Society for their great generosity toward us.

Jim, in the twilight of his life, would take the subway to The Museum of Natural History and still maintain his interests. Eventually he and his wife

moved to a retirement village in Connecticut. Lee Finley, well known in catfish circles, was kind enough to provide transportation for him so that he could attend the convention of the Northeast Council of Aquarium Societies, held annually in April. On a few occasions I was able to spend some time with him, and I was also pleased to see him attend one of my presentations. Walking with a cane, he had great difficulty maneuvering, but it did not prevent him from attending these wonderful get-togethers. Jim passed away in March of 2013 at the ripe old age of 98. I feel privileged to have had a friendship with him that spanned 58 years. He had a full life, and contributed greatly to so many phases of aquaculture.

Shortly after the 1999 Brooklyn A.S. presentations, I was contacted by Dave Schnell of the Potomac Valley Aquarium Society in Virginia, and asked to give a presentation at their convention. Stan Weitzman was also invited to speak, which I was happy to learn. Although we kept in touch very frequently, it had been several years since we had actually been together. After the presentations, the organization presented us with plaques citing our contributions. It was a nice gesture on the part of the Potomac Valley A.S., and Stan and I were quite pleased. A few days later Stan sent me this note, which I thought very generous on his part.

Subj: Misc.
Date: 11/15/99 10:08:00 AM Eastern Standard Time
From: Weitzman.Stan@NMNH.SI.EDU (Stan Weitzman)
To: RSLtetra@aol.com

Hi Rosario,

Well, it has been really good to see you again after so many years! Furthermore, I think it was particularly nice and appropriate for both of us to have received "plaque recogniticon" from the Potomac Valley Aquarium Society at the same time. My facetious remark about that is what one gets when one reaches a certain age aside, I think you have well earned it from a variety of standpoints regarding your many contributions to the aquarium hobby. Your success breeding a wide selection of often difficult to breed aquarium fishes over these many years is due to far more than having the luck to have had an excellent water supply. For many years I have received various reports of your talks to aquarium societies and I am now pleased to have heard one of them and hearing it twice makes the impression much stronger. I can well see why aquarists enjoy your talks, for they not only are informative but they have a quality of humor and self recogniticon (no pretension) that is truly honest and enjoyable. May you be able to please and inform aquarists for many years to come!

Stan Weitzman



Mayfly photos from Wikipedia
Coelacanth photo from pinterest.com

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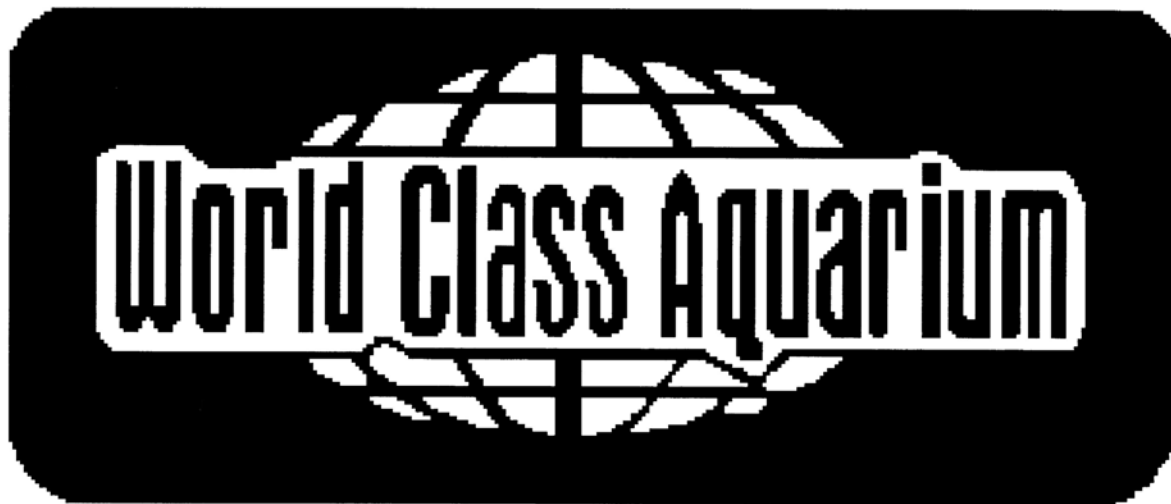
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Fishy Friends' Photos

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!*



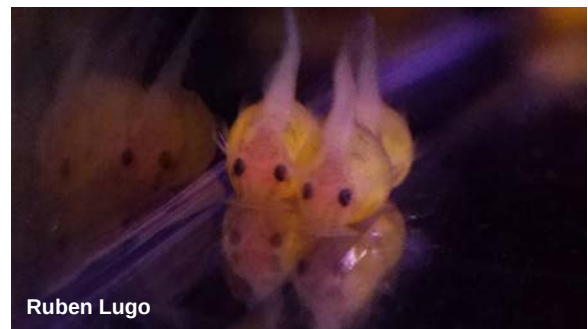
Ruben Lugo



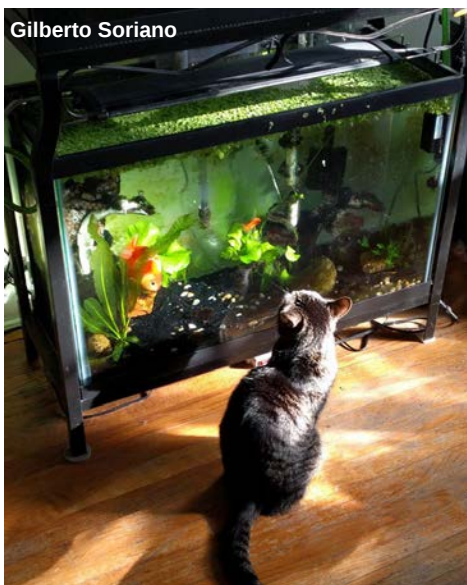
Joe Gurrado



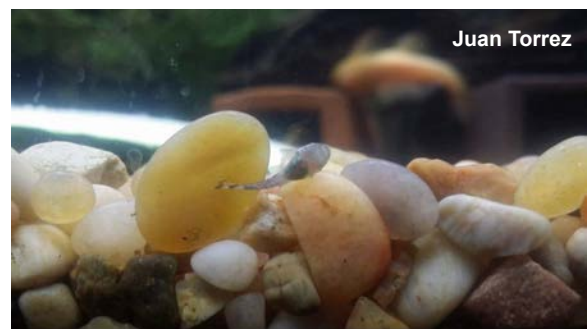
Michael Vulis



Ruben Lugo



Gilberto Soriano



Juan Torrez





GCAS Happenings

May

March Bowl Show Winners:

- | | |
|-------------------|-----------------------------|
| 1 BILL AMELY | BLACK DOUBLETAIL MALE BETTA |
| 2 RICHARD WAIZMAN | BLUE-WHITE PEARL BETTA |
| 3 BILL AMELY | RED MALE BETTA |

UNOFFICIAL 2016 BOWL SHOW TOTALS:

BILL AMELY	10	ED VUKICH	5	RICHARD WAIZMAN	3
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A WARM WELCOME BACK TO RENEWING GCAS MEMBERS SHUNMUGAM AL, ANDREW DeSANTIS & SONS, ARTIE FRIEDMAN, ROBERT HAMJE, AND DAN PULEO!

A SPECIAL WELCOME TO NEW GCAS MEMBER PET RESOURCES!

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

GREATER CITY AQUARIUM SOCIETY

Next Meeting: June 1, 2016

Speaker: Rusty Wessel

Topic: TBA

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: May 13, 2016

Speaker: None

Event: *Giant Spring Auction*

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: May 20, 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@liasonline.org

Website: <http://liasonline.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: May 10, 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: May 19, 2016

Speaker: Anthony Mazzeroll

Topic: *Cambodian Aquarium Fish*

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: May 19, 2016

Speaker: Tom Allison, from ZooMed Labs

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

Email: salsilv44@yahoo.com

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

Sleeping with the Fishes

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.

According to a report on Digital Trends (<http://www.digitaltrends.com>), Airbnb is sponsoring a contest in which three winners will be able to sleep in a bedroom completely surrounded by glass underneath the Paris Aquarium.¹ The bedroom is about 32 feet underwater and winners can watch the aquarium's 35 sharks in 360 degree panoramic views.

After the contest, marine biologists will use the enclosure to study the habits and behavior of sharks. The house rules for the underwater bedroom include tips like "No sleepwalking or night swimming," "Keep your heads and feet in the bedroom at all times," and "Sheep can't swim, so count sharks instead."

Contest winners will also be treated to a private tour of the Aquarium de Paris, which was also the world's first aquarium when it opened in 1867. And for winners located outside of Paris, the prize includes round-trip airfare.

Unfortunately for shark lovers, or anyone who is comfortable sleeping in an enclosure with only a glass wall separating you from 3,000,000 liters (over 790,000 U.S. gallons!) of water, the contest just ended (the deadline to enter was April 3rd, 2016).



References

¹ <http://www.digitaltrends.com/cool-tech/sleep-underwater-paris-aquarium-sharks-airbnb/>



Fin Fun

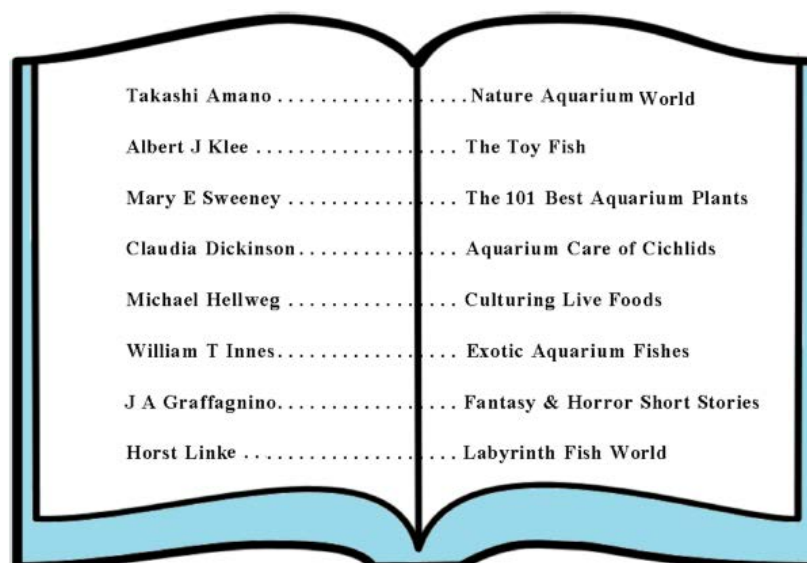


ROOTS OR RHIZOMES

A plant is a plant is a plant! Not always. Even plants with rhizomes have roots, but plants with roots don't always have rhizomes. Can you identify which of these plants have rhizomes?

Plant	Rhizome	
	Yes	No
<i>Aponogeton rigidifolius</i>		
<i>Cryptocoryne parva</i>		
<i>Riccia fluitans</i>		
<i>Anubias barteri</i>		
<i>Ludwigia repens</i>		
<i>Bolbitis heudelotti</i>		
<i>Nuphar japonica</i>		
<i>Lemna minor</i>		
<i>Anubias nana</i>		
<i>Echinodorus ozelot</i>		

Solution to our last puzzle: **From the Bookshelf**





2016 National Convention
Denver, Colorado



American Killifish Association and the Colorado Killie Club

May 27 - May 29, 2016

Airport Marriott at Gateway Park

Close to the Airport and Close
to Downtown Denver.

Convention Web Site

www.akacnv16.com



Speaker List

Keynote Speaker: Heinz Ott from Germany
Roger Brousseau: South American Annuals
Tyrone Genade: *Nothobranchius*
Ken McKeighan: The Evolution of Killifish
Mark DelRaso: Killifish Habitats



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