

modern AQUARIUM



June 2015
volume XXII
number 4

Greater City Aquarium Society - New York



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modern AQUARIUM

Series III Vol. XXII, No. 4 June, 2015

ON THE COVER

Our cover this month features a photo of *Betta renata*, a mouthbrooding betta from the island of Borneo. For more information on these relatively large bettas, see Al Priest's article on page 15.

Photo by Alexander A. Priest

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From the Editor

by Dan Radebaugh

My topic for this issue is not this issue, though I believe it to be a good one. My topic rather, is older issues—*many* older issues. As most of you know, we have been posting **Modern Aquarium** to the web for a couple of years now, including volumes dating back to 2007, the earliest year for which we still had the original electronic files. Anything older must be scanned—a truly tedious process. Each and every page must be individually handled, so it's quite labor intensive and time consuming. Nevertheless, it has been happening. Some months back we posted the volumes from 2005 and 2006. More recently, 2003 and 2004 went up. By the time you read this, all of our issues going back to 2001 will be available online, with the exception of the most recent twelve months. If you're resourceful or lucky, even those can be viewed, but that's another tale.

My present goal is to make all of Series III available online by the end of this year. I must say that part of the frustration I experienced while doing all this scanning, was to see so many articles that I wanted to investigate, and only being able to read part of a page before having to move on to the next one. What a treasure-trove of information! Fish, plants, saltwater, freshwater, you name it, it's probably there somewhere!

There are a couple of things to know that will help you out in your search for specific subjects. First of all, in **Modern Aquarium** there is, in the first issue of each year, an index of articles that appeared during the previous year. So you don't need to search each issue of each year; just go to the first issue of the year (recently that's been March, but it used to be January) and find your subject of interest, then go directly to the appropriate issue. There is some possibility of finding your subject via one of the search engines (Google, Bing, etc.). You might try one of these first—you might luck out. Using our article index though, would be more certain, and perhaps quicker in the end.

Once you find the article you're interested in, you can download it from the site for free. You will be asked to 'sign in,' which I know causes some folks some concern, but in this case I haven't found it to trigger a flood of spam. Once you create an identity on the site, you can download software from them to automatically convert the web pages to a pdf for your download. Another benefit of establishing an identity on the



site is that you can create a 'stack' of titles (**Modern Aquarium**, for example) in which you are interested. This is a handy feature that can shorten your search time if you know what title you're likely to want to return to. I can report to you that a number of people out there in the wide world have added **Modern Aquarium** to their 'stack.' For the information of those who care about such things, **MA** has also drawn a fair number of 'followers.'

As I (quickly) scan the selections in all these issues, it occurs to me that we might look at the idea of creating some compendia of articles on certain areas of interest. Anabantids leap to mind, but there are others. It's something to think about.

* * * * *

Remember, 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 always, always need more articles. I know several of you are keeping and/or breeding fish, or working with plants or invertebrates that I would like to know more about, and I'm certain other members would be interested as well. Share your experience with us. Write about it! If you're a little unsure about the state of your writing technique, don't worry – that's why there are editors. If you don't share what you know, who will?

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!





GCAS Programs 2015

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 4	Joseph Ferdenzi <i>A Beginner's Guide to Aquarium Equipment</i>
April 1	Jules Birnbaum <i>The Building of a Dream</i>
May 6	Richard Pierce <i>Seahorses, Seadragons, and Pipefish</i>
June 3	Jeffrey Bollbach <i>How to Get Rich Breeding Fish: My Obsession with Aquabid</i>
July 1	Mark Soberman <i>Keeping and Breeding Corydoras Catfish</i>
August 5	Silent Auction
September 2	Tom Keegan <i>How Fish Get Here, There, and Almost Anywhere</i>
October 7	Steve Lundblad TBA
November 4	TBA
December 2	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 2015 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

Well, June is bustin' out, well—you know.. This is the time of year when we have traditionally asked for nominations for positions on our Board. As much as we might like the idea of good things never changing, they do. And we do. In the Editor's message I mention looking through old issues of **Modern Aquarium**. While many of the same names were around those years ago, many are no longer with us. The way all institutions survive the inevitable changes in membership is to constantly welcome newcomers to vital positions in leadership. We are no exception. Everything we do here to run our organization is done by our members who are willing to help out in vital roles. We need to constantly renew ourselves by passing on the torch of leadership. That means we need to be willing to serve, if only for a while.

If you can think of an area where you could be of help to the club, or if you know someone whom you think would be a good choice, put your name, or theirs, in nomination. Don't be shy—we need you! Please slip me or Marsha (or any Board member) a note or a word that you would be willing to serve, and we will follow up with you to see where we might need you the most. You've joined the club—help us make it better!

On another matter involving change, most of us are long accustomed to receiving the yellow post cards reminding us of our monthly meetings. Many of you have expressed a desire to receive those reminders by email instead, and incidentally save on the expense of printing and mailing the cards, as beloved as they may have been for all these years. There will be a sign-up sheet at our meetings for you to let us know if we can send you email reminders instead of the cards. Please sign up! If you forget to do it at the meeting, let me know by email at gcas@earthlink.net. Thanks!

Dan



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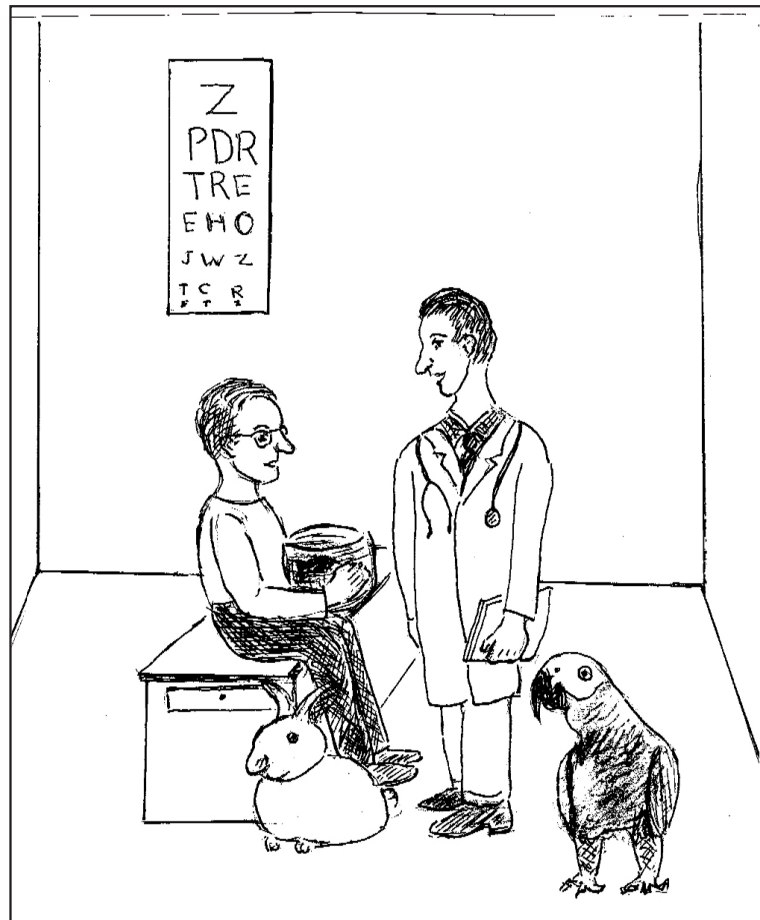
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May's Caption Winner:

Dan Puleo



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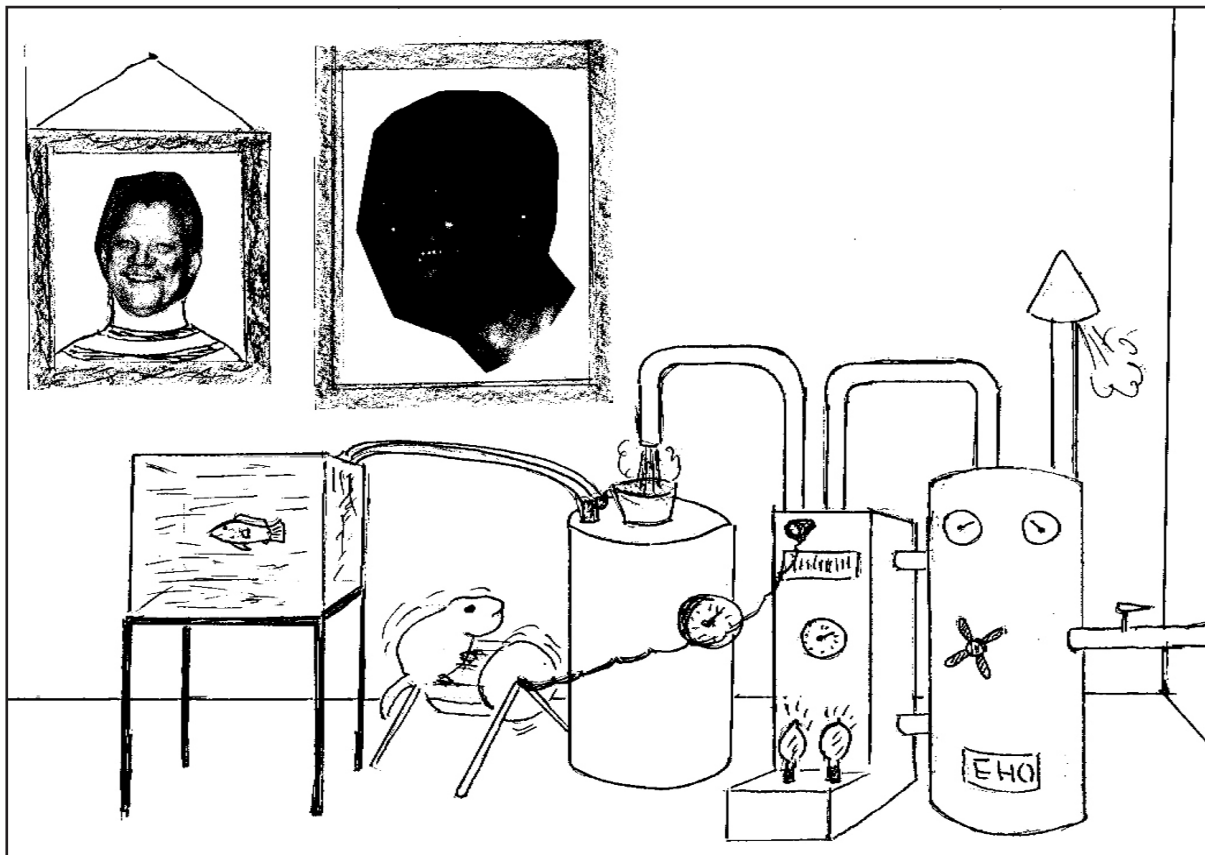
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The Modern Aquarium Cartoon Caption Contest

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!



Your Caption:

Your Name:

The Proposal

by Eliot Oshins

How many fish tanks should a person have? Good question. It depends on how much room you have and how involved you want to get.

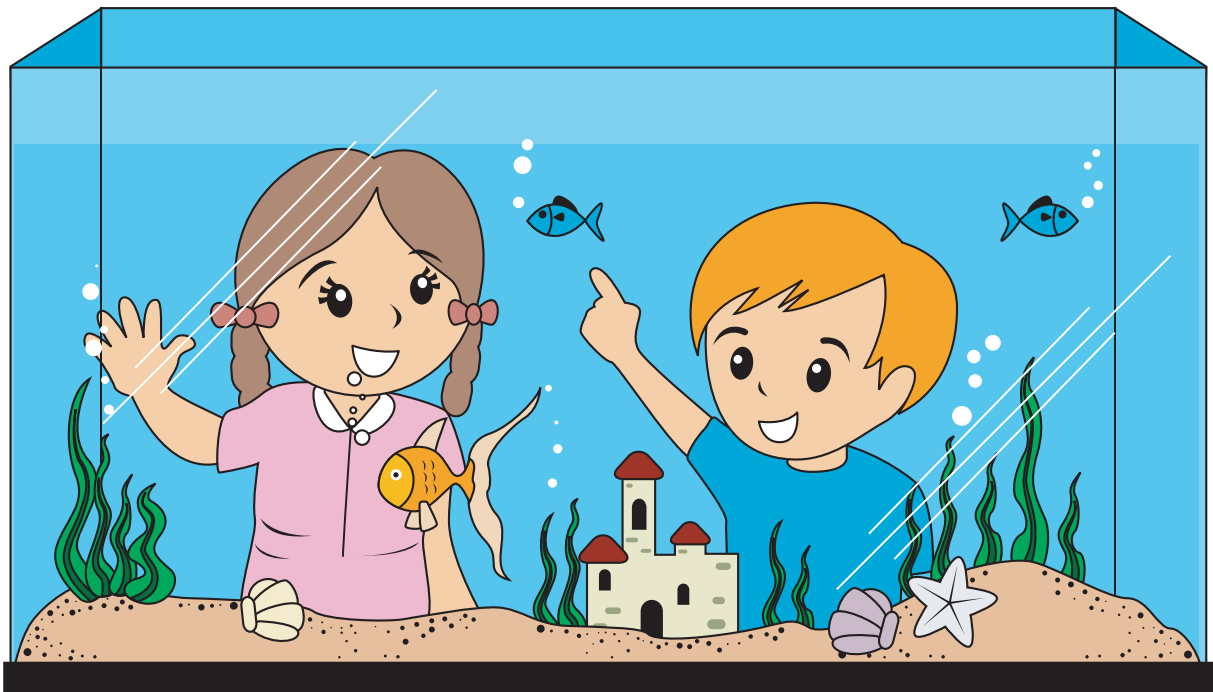
Years ago I had 25 tanks in my basement. I did cut back to three tanks in my basement and a 135 gallon cichlid tank in my first floor den. For eight years I was a snowbird, spending my winters in Florida. I was very lucky to have my good friend, Herb Karen, taking care of my house, my fish, and my plants.

This past winter, I decided to stay in New York and not go to Florida. The fish bug hit me again, but this time it hit me hard. I now have 12 tanks in my fishroom (it sounds better than 'my basement'). They range from angelfish, blue acara, catfish, guppies, kribensis, clown loaches and buffalo heads, and African cichlids in the large tank in my den. I keep an extra tank just in case I see a fish at the auction that I must have. Speaking of auctions...

Our members bring in some very fine fish and plants for the auction. The table gets overcrowded with fish and plants, and also gets very crowded with all the members looking, and time is short. It's impossible to see everything, as the meetings get started promptly.

It's impossible to know every kind, as there are well over a thousand types of fish out there. So it would be a good idea if members could add to the bag of fish, information about the fish. Where it comes from. What fish it could be mixed with? pH and temperature. It would help a great deal and also help sales. It's worth a try. You would receive a mini education without a guest speaker, and the fish is observable.

So when the auctioneer, either Ed or Dan or whoever holds up the bag of fish, get into the buying mood and keep your hand up high and be the top bidder. Believe me, you will go home feeling magnificent!



Support Fish in the Classroom!

If you have any 5 or 10 gallon tanks, or any filters, pumps, or plants that you could donate to NYC teacher Michael Paoli's classrooms, could you please bring them in or email Rich Levy (rlevy17@aol.com). If you'd like to donate larger tanks, be sure and email Rich so he can make sure Michael can accommodate it.

SWEPT AWAY!

Story and Photos by Stephen Sica

Many years ago, Donna and I vacationed in Cozumel for several days to do some diving. Cozumel is one of the most popular diving locations in the western hemisphere. It is unique for its drift diving, because of both offshore currents and currents that run between the island of Cozumel and mainland Mexico. If you limit yourself to drift diving, you do not have to perform even one swimming stroke. Of course, if you wish to slow up or stop to observe the sea life in detail or snap a photograph, then you do really have to swim. It's actually swimming in place. I believe that I mentioned all of this in a previous article.

Since those days, we've visited Cozumel once or twice while on a western Caribbean cruise. Who could pass up the opportunity to dive Cozumel while on a shipboard vacation?

Anyway, this brings me to mention one of my very favorite marine fish. It's the glassy sweeper, *Pempheris schomburgki*. By the way, it truly happens to be one of my favorite fish. I think it's because these fish always swim in schools, often comprising hundreds of fish. A school usually occupies a very small area. This small space is usually inside of a cave or a notch in a coral reef. I also enjoy the reddish color of their small but full body. Books often describe the glassy sweeper's coloring as a coppery luster.

This is the only sweeper type fish that I have observed in the wild, so it seems to me that the species is limited. The glassy sweeper doesn't seem to merit a great deal of scientific research, so I checked my reference books. There is one other species in the family Pempheridae, the shortfin sweeper, *Pempheris poeyi*. It is a shallow water fish found at depths of only fifteen feet, while the glassy sweeper may be found as deep as eighty feet. I have observed glassy sweepers at depths of sixty feet in Cozumel and thirty feet in the Florida Keys. The shortfin is about two-thirds the size of the glassy sweeper. It is much less common than

its family member and only occasionally found in the Bahamas and Caribbean. Aside from its body shape it has no distinctive markings except a black band at the base of the anal fin. The glassy sweeper also has this black band. The shortfin has a more silvery body with yellowish brown and black tinting. It is much less reddish or coppery than the glassy sweeper. The

shortfin is wary of divers and will dart away if closely approached. I don't believe that I have ever seen a shortfin sweeper, much less been able to photograph one.

The last time that we dove Cozumel, I observed a school of glassy sweepers during a drift dive. This was quite unique, because there are no caves in the open water in which these fish

could congregate. The bottom is sandy, with sparse and infrequent rock outcrops and a few clumps of mostly soft corals. The school was hovering with a large green sea turtle by a very small clump of rocks and coral.

Last September in Key Largo we were taken to a dive site named "Christmas Tree Cave." We found the cave to be home to a large school of glassy sweepers. The cave was open at each end, so we contemplated swimming through it, but we were unsure of the swimming space inside the cave, so we decided to forego our initial impulse. Besides, all of the fish inside the cave would have been disturbed. Instead, I decided to try photographing the sweepers and the seascape of the cave. Unfortunately, there was much turbulence created by so many fish in such a small space. When I took a photograph, the photo would be full of pink spots, from the strobe "igniting" grains of sand and other particles suspended in the water column. If I turned off the strobe, the photo would have an overall bluish tint with very little color. It would be too dark to actually photograph the fish. Their coppery or pinkish tint would be too faint to record on digital "film." I decided to take my chances,



In approximately 35 feet of water, an open-ended cave in Key Largo, Florida provides a home to a school of adult glassy sweepers, *Pempheris schomburgki*.

use the strobe, and accept any imperfections caused by the flash.

Later, as I reviewed my photos, I did discover countless imperfections. Using Adobe Photoshop, I tried to improve the photos. Some of the results are presented in this article.

The length of a mature glassy sweeper is six inches, but I don't recall seeing any specimens longer than three or four inches. In almost all of my sea life observations, I have never seen a fully grown specimen, that is, according to the literature that I read. Perhaps the fish do not grow to maximum "book size."

If one of them does grow to its full size—whatever that actually may be—it may be a rare occurrence.

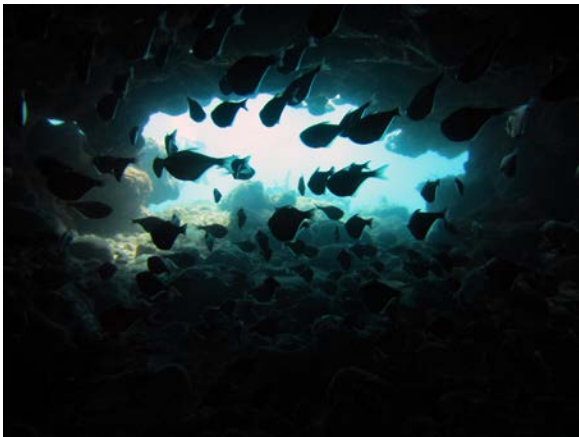
In some areas of the Caribbean, the glassy sweeper has been referred to as the copper sweeper or hatchetfish. Fortunately for anyone who would like to photograph this fish in the wild, it appears unconcerned and usually allows a close approach. I find it an attractive fish, and always enjoy encounters. After all, you might unexpectedly swim up to a hundred beautiful animals just around the next coral head! What more can a fish lover desire?



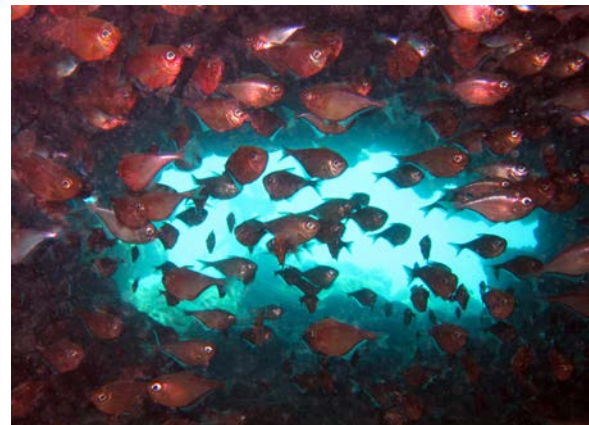
The entrance to Christmas Tree Cave in Key Largo, Florida is the home to a school of glassy sweepers.



A diver ventures into the mouth of Christmas Tree Cave in Key Largo, Florida at a depth of approximately 35 feet. I took this photo from the opposite end of the cave. I estimated the cave to be about 25 feet in length. Fortunately, the cave is too narrow for penetration. Can you imagine the potential damage to the sea life by a diver attempting to swim through this cave?



A closer look through Christmas Tree Cave in Key Largo, Florida and its glassy sweeper, *Pempheris schomburgki*, inhabitants. I did not observe other fish species in the cave, but large havens in a reef always attract smaller creatures that are vulnerable.



The reddish or coppery color of the glassy sweeper, as well as its hatchetfish-like body, gives this small tropical fish a distinctive appearance. While I have never seen this fish in a pet shop, its relatively small size and schooling behavior might make it attractive in a marine aquarium.





BOWL SHOW RULES

There is a Bowl Show at every GCAS meeting, except our Silent Auction/fleamarket meeting (August) and our Holiday Party and Awards Banquet meeting (December). These shows are open to all members of GCAS. Rules are as follows:

- Only current GCAS members may enter fish in the Bowl Show.
- There is a limit of 2 entries per member per meeting.
- Unlike some other clubs, every month is an “open” Bowl Show at the GCAS (i.e., there is no “theme,” such that one month cichlids are judged, the next livebearers, the next anabantoids, etc.).
- Any fish that wins any prize (1st, 2nd, or 3rd) may not be entered again in the same meeting year.
- The current Bowl Show Coordinator is Leonard Ramroop, who usually also serves as judge (although guest speakers are often asked to do the judging honors).
- 2.5 gallon containers are available for use (brought to the meetings by the Bowl Show Coordinator), but entrants are responsible for providing enough (and suitable) water for their fish.
- For a fish too large (or too small) for those containers, entrants must supply a suitable container, which must be clear on at least three sides.
- Only one fish per container (i.e., no “pairs”).
- No plants, ornaments, or equipment (filters, airstone, etc.) are allowed in the judging tank (an external mirror, or opaque cards between containers is acceptable, as is a cover that does not obstruct side viewing).
- Points are awarded: 5 points for 1st Place, 3 for 2nd Place, and 1 for 3rd Place.
- Ribbons are awarded: blue for 1st Place, red for 2nd Place, and green for 3rd Place.
- The person with the most points at the end of the meeting season receives the Walter Hubel “Bowl Show Champion” trophy at the Awards Banquet.
- The decision of the judge(s) is final.
- A running UNOFFICIAL total of the points awarded is printed in **Modern Aquarium**. Only the tally of points maintained by the Bowl Show Coordinator is official.
- **In case of ties:**
 - 1st Tiebreaker – most 1st Places
 - 2nd Tiebreaker – most 2nd Places
 - 3rd Tiebreaker – most entries

The Collector's Obsession

-or-

Details of a Mystery Solved: Supplement to the Final Chapter

by Steven Hinshaw

New material came across my desk after the main article had been submitted to press. In order to keep things up-to-date this important information is being included here as a supplement to the article entitled "The Final Chapter."

Susan Priest, author of **Modern Aquarium's** "Wet Leaves" and long-standing member of the GCAS, wrote about **EAFs** in her November 2007 (Parts I & II) and December 2007 (Part III) column. The three part series is titled: "**Exotic Aquarium Fishes** by Dr. Wm. T. Innes, A Seventy-Two Year Perspective." If you don't already have a paper copy of these issues, they can be viewed online at the GCAS website. The overview discusses the core information and then variations between several editions. What makes the articles special are the personal notes and interpretations from Susan, over half a dozen of her interviewees, and the words of Dr. Innes himself.

In paragraph 4, page 20 of Part II, Susan relates that the reason for the portrait starting in the 6th Edition is that "(h)is readers requested it." When you read **EAF**, it is not hard to believe that Dr. Innes has befriended you! There is truly a bonding experience with the book because of the author's voice, so it is no surprise that readers would want to know what their "friend" looked like! This note complements the information provided on the topic in "The Final Chapter."

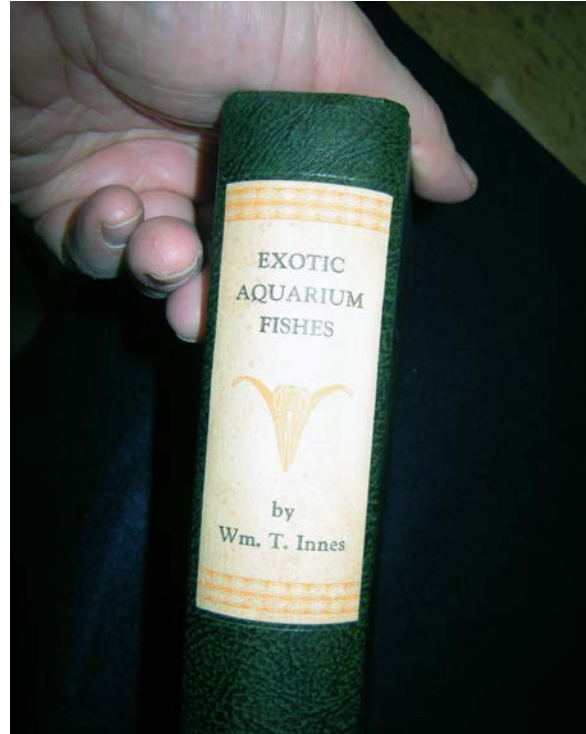


Figure 1b: Paper spine label with yellow/orange ink on boxed 1st Edition **EAF**. Note mint condition!



Figure 1a: 1st Edition in its original shipping box from Wayne Leibel's collection.

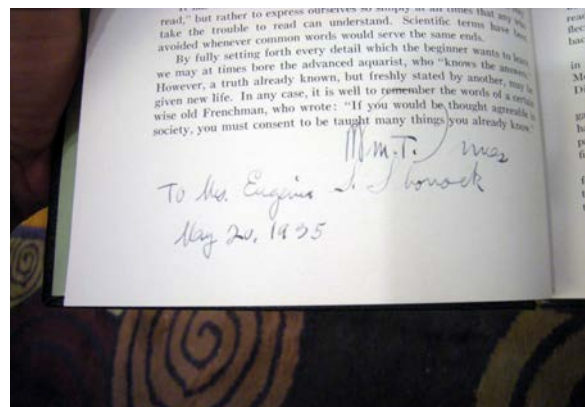


Figure 1c: Inscription from Wm. T. Innes to Eugenia Shorrock dated May 20, 1935 at the end of the introduction to this 1st Edition of **EAF**. Note that the 1st Edition was copyrighted May 1935. This is truly a first 1st!

Following up from the discussion about 1st Edition EAF's with dust jackets, Wayne Leibel generously provided photographs of his 1st Edition book still in its original shipping box. (Figure 1a). This particular book is very special, having a solid provenance and personal history. The book's facts are:

- 1) There is no dust jacket; it is stored in its original shipping box.
- 2) It is a signed edition with an inscription to Eugenia Shorrock (Figure 1c).
- 3) The paper spine label is a bit wider than future labels, and has the characteristic yellow to yellow-orange ink seen on 1st Edition books.
- 4) It is pristine, setting the standard for the term "mint condition"! (Figures 1a, 1b, 1c).
- 5) The provenance is: Wm. T. Innes to Eugenia Shorrock to Lee Finley to Wayne Leibel.

Wayne related the following narrative about the book's past. When Innes gave her this book, Eugenia Shorrock was the secretary of the Boston Aquarium Society. In fact, Innes traveled to Boston to judge their Spring show, whereupon he presented her with the book hot off the press. The inscription is dated May 20, 1935 (Figure 1c). The 1st Edition was copyrighted May 1935. This EAF is truly one of the first-1sts!

The 1st Edition with the blue fiber DJ and blue spine label creates a bit of a pickle. About 20 to 25 years ago, owner, Dan Katz, along with Wayne Leibel, bought books from the late Ross Socolof, the renowned ichthyologist and collector of aquarium literature, from his collection in Florida.

During my discussions with the two of them, Dan recalled that "... it may very well have been Ross Socolof from whom I purchased my books (12th Edition and the 1st Edition with DJs). Not 100% positive, but 90% sure it was him."

If this book is a hybrid, those who knew Mr. Socolof are confident he would not have created it. How he acquired the book, or why it has these unique features, will remain a mystery. The provenance is better documented with the "Florida collector" now thought to be Ross Socolof.



Figure 2: Stu Wheeler, noted EAF collector and founder of The Acorn Bookstore in Columbus, Ohio, coined the term "green-moiré binding" to describe one variation (far right) of the three WWI-era 4th Editions.

Fun Fact: Lee Finley shared a correspondence from October 18, 1989, wherein Stu Wheeler coined the term "green-moiré binding" to describe the lime-

green wavy iridescence of the last 4th Edition variant (Figure 2). If you research the term "moiré" you will learn how this mathematically defined phenomenon is a very appropriate descriptor, or as Lee says, "it fits to a 'T'!"

In my quest to locate a proper 8th Edition DJ (spine label orientation with blue fiber paper), I obtained one that was found loose in the late Steve Stewart's collection, now owned by Gary Bagnall of ZooMed (Figure 3). Steve Stewart is also a prominent name with reference to aquarium literature, so his collection has a lifetime of wonderful and unique items.



Figure 3: DJ from the Steve Stewart Collection. This features the Bottom to Top spine lettering & "traditional" typeface, but lacks the blue fibers seen in similar styled jackets.

Wasn't I surprised and a bit perplexed when the DJ arrived looking like an 8th Edition, but NOT having blue fibers in the paper!

Where does this one fit in? Could this be an elusive DJ from a 1st to 4th EAF or a variant of an 8th? It does make me wonder! Here are my thoughts on the matter. Because the 5th and 6th have "gothic" typeface, the 7th and 8th have "traditional" typeface, all four have spine lettering running Bottom to Top, and all 7th Edition DJs encountered have had the blue fibers, I'd suggest that early run 8ths were leftover blue fiber DJs. When these ran out, Innes printed up a small batch of new ones on different (lower quality) paper for the remainder of the 8th Edition sales—hence the one in question.

This may explain why, at the 9th Edition, the paper is consistently different—being thicker, with a texture, and having a blue or aqua hue (Figures 4 & 5). From the 10th Edition onward, the paper quality again changes to being thinner and more brittle. Of all the 9th Edition DJs encountered, these features are consistent. In other words, 9th Edition DJs are easy to identify because of these two features: texture and color hue. The obvious difference is the spine lettering oriented Top to Bottom—continuing through the 18th Edition DJ—before the styles changed again.

In the main article there was discussion about the European-style lettering and my English 10th Edition having a DJ with blue fibers. It is still logical to have this jacket with this book, especially since the DJ spine

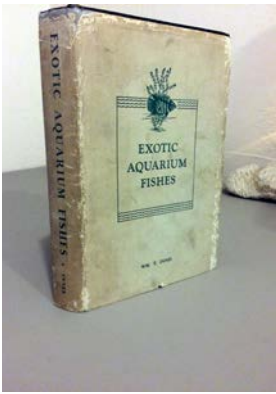


Figure 4: 9th Edition DJ. Note spine lettering top to bottom. It is hard to see in this illustration, but the paper is thicker, with a rough textured surface. There is also a blue or aqua colored hue to the paper.

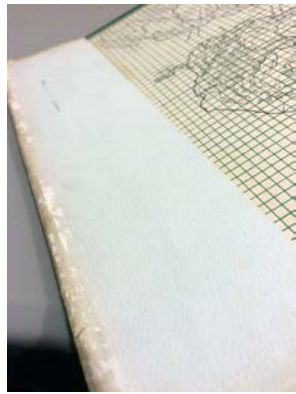


Figure 5: Inside flap of a 9th Edition DJ. Note the texture and blue hue, evidenced only on 9th Edition jackets.

lettering had changed. If a “lost box” of blue fiber jackets turned up, they couldn’t be used on current, post-1948 editions due to the new spine orientation. Why not put them on books destined for foreign sales?

Summarizing: With articles from Susan Priest, Stu Wheeler, and myself, we have a thorough appreciation for EAF’s attributes. The term “green-moiré binding” best describes the unique 4th edition. The boxed 1st Edition with yellow spine label and no dust jacket sets the standard for the 1st Edition. The blue label 1st Edition remains a mystery. With respect to dust jackets, 9th Editions have features that easily identify it, but there is some mystery on how to identify an 8th Edition DJ. Do you have additional information on these books, or clues for solving these remaining mysteries?



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Fishy Friends' Photos

by Greater City Aquarium Society Fishy Friends

Here is another installment of our newest ongoing column. These are photo submissions to our "Fishy Friends" Facebook group. I've left the species 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!



The “Kidney” Betta

Betta renata

by Alexander A Priest - photo by author

OK, so *Betta renata* is not commonly called “the kidney betta.” (I just thought it would make an eye-catching article title.) However, *renata* does mean “having a kidney,” and this refers to the throat markings of this relatively large mouthbrooding Betta.

Horst Linke writes that they can attain 4.5 inches (11 cm)¹. Dr. Robert J. Goldstein puts them at At 5.5 inches (14 cm)². Based on my own specimens, I assume both of these refer to “Total Length” (tip of nose to end of the caudal fin), as the tail fin is an inch or more in adults. This still means that adults can reach a “Standard Length” (body only) of nearly 3.5 inches.

Betta renata was formally described in 1998.³ However, Dr. Goldstein notes that *Betta renata* “is the same fish that Weber & De Beaufort incorrectly identified as *B. anabatoides* in 1922.” It is a member of the “Waseri Complex,” a group of Betta species sharing similar physical attributes and consisting of *Betta chloropharynx*, *B. hipposideros*, *B. pi*, *B. renata*, *B. spilotogena*, *B. tomi*, and *B. waseri*. Dr. Goldstein refers to the members in this complex as “the big yellow mouthbrooders” and that “Each species within the group has distinctive

black markings on the lower face and chin.”

Throat markings give rise to the species names of many of the members of this complex. For example, *Betta pi* has throat markings resembling the Greek letter “pi,” and *Betta chloropharynx* is so named because of its green throat (*chloros* meaning green and *pharynx* meaning throat).

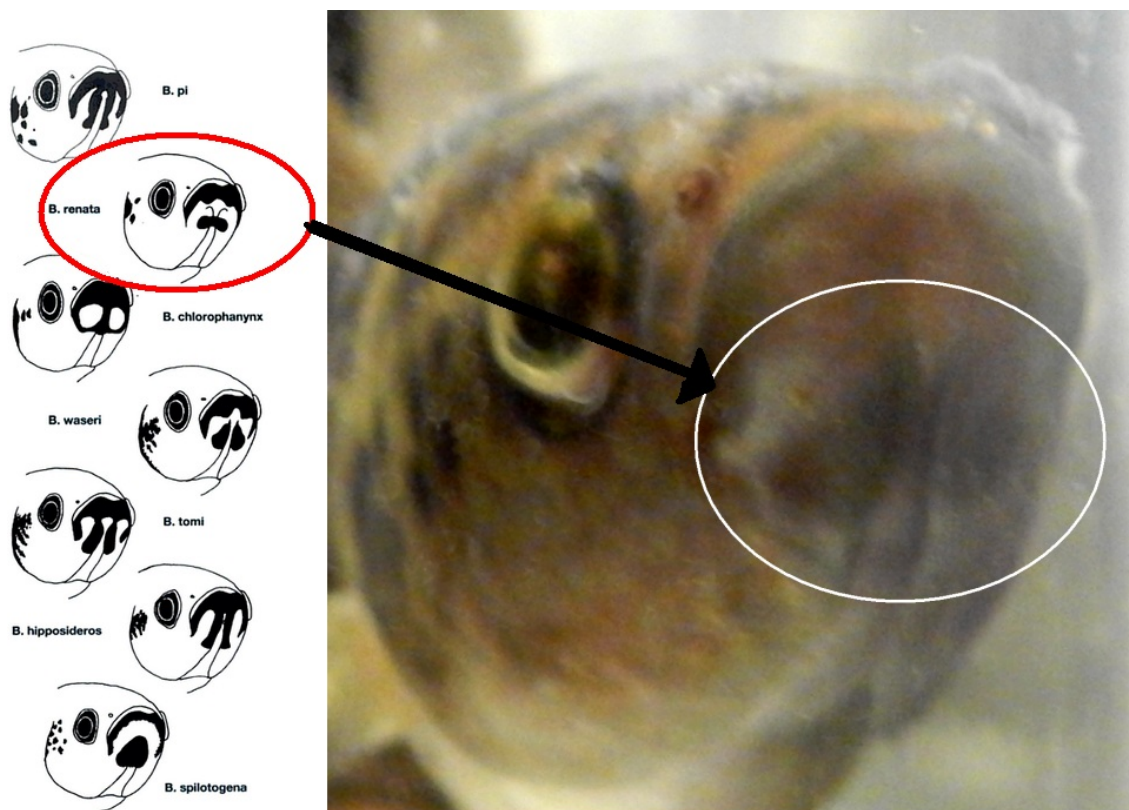
Scientific Name: *Betta renata*
Temperature range: 73 - 80°F (23-27°C)
pH range: 4.0 - 6.0 (acidic)
Hardness: 0 - 90 ppm (soft)
Adult size: up to 4.5 inches (11cm) TL
Reproduction: Paternal mouthbrooder
Sexual dimorphism: Adult males are more colorful, have more extended fins, and a broader head
Native habitat: Jambi, Sumatra, Indonesia in Borneo
Aquascaping: Caves, driftwood
Nutrition: primarily carnivore (live/frozen worms, brine shrimp, etc.)

Betta renata was originally found near a rubber plantation in a peat forest black water swamp. The water there was highly acidic, with a pH of 4.1. While *Betta renata* can be made to adapt to higher pH levels, a very low pH is

almost a certain requirement to condition them for breeding in the home aquarium.

Other requirements for successful maintenance and spawning include caves and other hiding places to give the male a place to stay while holding eggs. As in all mouthbrooding *Betta* species, *Betta renata* is a paternal mouthbrooder, with the male holding the fertilized eggs in his buccal pouch until they hatch. Caves also give the fish a place to hide. Although they are relatively large for the genera, they are also very timid and easily spooked. Caves provide a sense of security, and reduce stress in captivity.





Throat markings of *Betta renata*.

Drawings on the left from **The Betta Handbook** by Robert J. Goldstein

Subdued lighting adds to their sense of security, as does driftwood, which provides hiding/brooding areas, and adds tannins to help lower the pH. As with most *Betta* species, they are jumpers, and need a tight-fitting cover.

Betta renata will accept dry flake and pellet food, but are carnivorous by nature and do best on live foods (blackworms, brine shrimp, etc.), which are also important to condition them for spawning.

The IUCN Red List of Threatened Species, lists some members of the Waseri Complex as either “Vulnerable” (*Betta chloropharynx*, *B. hipposideros*, *B. tomi*) or “Critically Endangered” (*Betta spilotogena*), but *Betta renata* has not yet been Red List evaluated.

However, given the ongoing destruction of its natural habitat, its limited distribution range, and its rarity in the aquarium hobby, it would not be unreasonable to assume that it is at least “Vulnerable,” even if it does not currently appear on either the Red List or the C.A.R.E.S. Conservation Priority list.

If captive breeding is your goal, this is not a fish for beginners, due to the difficulty in maintaining optimal conditions for spawning. It is not very colorful, nor does it interact with its caregiver. But, its successful maintenance (and, hopefully, spawning) can provide considerable satisfaction.



¹ Linke, Horst. **Labyrinth Fish World**. Fish Magazine Taiwan, 2014.

² Goldstein, Robert J. **The Betta Handbook**. Barron's Pet Handbooks. Hauppauge, N.Y., 2004.

³ Tan, H.H., 1998. **Description of two new species of the *Betta waseri* group (Teleostei: Osphronemidae)**. Ichthyol. Explor. Freshwat. 8(3):281-287.



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OH, DAM!

by Ron Coleman



Costa Rican Hydroelectric Dam. Photo from thecostaricanews.com

There are big changes afoot in the world of cichlids, and I am not talking about club events, conventions, or even large aquarium setups. I am talking about terra forming. Terra forming refers to large scale altering of the structure of a planet. In this case, I am referring to our planet, Earth.

As a species, we have been doing this for a long time, and although it took awhile we have come to appreciate that while there may be short-term benefits to terra forming, there are also long-term costs. Dams are a perfect example of what I mean by terra forming.

As many of you know, I travel to Costa Rica each January to conduct research on cichlids in the beautiful rivers of that country. Costa Rica is known throughout the world for its efforts to promote conservation. The people of Costa Rica are regularly reported as “the happiest people on the planet.” But all is not perfect in paradise.

The standard of living in Costa Rica is relatively high. Not quite the same standard as North America, but certainly much better than many other Latin American countries. They have television and satellite dishes and cell phones, computers, etc. Not everyone has all these things, but these things are not rare. And all of them require power—electricity in particular. That electric power has to come from somewhere. Costa Rica is not a large country and they do not

have significant oil reserves; however, they do have a lot of rivers, and those rivers generally flow from substantial elevations in the central highlands down to either coast within a relatively short distance, making them ideal for hydro power, i.e., electricity generated by hydroelectric dams.

There may be alternatives, but as we are increasingly aware, no source of energy is free. The pollution of power produced from coal or oil is well-known, and a significant global problem. Recently the fracking of oil and gas-bearing shale has produced our lowest prices at the pump in years, but these come at significant costs in the form of potential ground-water contamination, and growing evidence of significant increases in the number of sizeable earthquakes in areas where fracking is common. I just learned today from a presentation by a scientist at the USGS (United States Geological Survey) that Oklahoma has now surpassed California in the frequency of sizeable earthquakes, almost certainly due to fracking. Solar power seems like a free lunch, until you scale it up and cover vast amounts of desert habitat, rendering that habitat unsuitable or at least much less desirable to its previous wildlife. And the perils of windmills, often touted as essentially “free,” are borne by raptors such as hawks and other birds sliced into pieces by the rotating blades.

So what about hydro-electric dams? Dams are being constructed all over the world. The larger the river, the larger the dam. And it isn't just one dam for one river. Current projects on the Mekong River in southeast Asia, one of the most important rivers in that part of the world, number in the dozens. Another recent talk I attended reported that there will be 11 dams on the main stem of the river, with 133 dams proposed for the watershed. This is a watershed that feeds somewhere around 60 million people, many of whom rely on fish for dinner. Tonle Sap, a lake in Cambodia that forms from the Mekong, has been called the most productive inland fishery in the world. Tonle Sap has a very complicated yearly cycle of flooding, drying, and flow-reversal that makes it particularly good for fish. How will the new dams (and those yet to be built) affect this intricate system? We don't know.

A little closer to home, there is the Rio Xingu, in Brazil. It is physically closer to California, but it is also mentally closer to our club, the PCCA, because unlike the Mekong, cichlids (and many other fishes of interest to club members, such as loricarid catfishes) live in the Xingu. Or at least they did up to now. The Belo Monte Dam is being constructed on the lower portion of the Xingu River. This is a massive project, complete with massive controversy. Controversial issues include the potential environmental impacts and the impacts on the indigenous peoples.

The impacts on the people are actually pretty clear: people can't survive on permanently flooded land. The effects on the environment are not so clear. Certainly construction of such a massive dam will completely alter the aquatic landscape. Fishes that rely on fast-moving waters will not be able to survive. They will either have to move elsewhere (seems unlikely) or go extinct. Fishes that migrate up and down channels will be blocked, and they too will disappear from this region.

We know from our own experiences here in North America that dams are neither simple nor free, even after they are built. Living and working next to the American River, just below the Folsom Dam here in Sacramento, I am acutely aware of how its construction in the 1950s has altered this portion of California, for better and for worse. I live in a city that could not exist without the dam, and correspondingly, would cease to exist rapidly should the dam give way. We as a state spend a large sum of money every year on salmon hatcheries and other actions to counteract the almost universally negative effects that the Folsom Dam has had on native fish populations. It is not just that the dam blocks the migration of the salmon; equally if not more important, the lake behind the dam (Folsom Lake) eliminated vast amounts of the best spawning areas for Chinook salmon.

We have learned other important things from these dams. Rivers have a "flow" to them that includes not just the water, but other things as well. Rivers

transport sediment. A dam stops that movement of material from higher ground down into the delta. This movement of sediment is vital to how rivers function in terms of fish habitat. When a dam is constructed, it stops the flow of sediment. This has numerous consequences. First, the lake behind the dam slowly fills up with sediment, ultimately rendering the dam useless for power generation and flood control, over a period of a few to many decades. Things are even worse on the downstream side. The river below the dam becomes "starved" for sediment and tends to pick up the fine and lighter materials from the bed. In fact, there are major projects on the American River to regularly dump gravel back in the river below the dam. This gravel is vital for salmon to spawn. Rivers above and below dams are not the same as they were before dam construction. We know here in California that dams have dramatically affected the fishes. How will they affect the cichlids in the tropical rivers of the world? By and large we do not know.

I think about this a lot, because the construction of dams has been going on at a breakneck pace in Costa Rica. I see them all the time. The construction sites are relatively easy to spot. The first sign is either a new or greatly improved road. These are built by the contractors to move the massive dam-building equipment, such as dump-trucks, to the work-site. Similarly, the presence of new or renovated housing in the area is often a sign of increased economic activity, i.e., well-paying jobs. These are some of the tangible benefits, some short-term, many long-term, that make dam-building attractive to local communities. It is hard to argue against such benefits, and as I have mentioned in a previous article, I too benefit because the new roads are precisely the roads I use to access new study sites for observing cichlids.

There are also different types of dams. There are large, continuously operating dams of the kind we are used to in California. Incidentally, lest we get too smug, there are somewhere around 1,400 dams in California!!! Another type of dam that is built in Costa Rica is the peak-demand dam, sometimes called a micro-dam. These are generally small dams, maybe only a few meters high, that generate power only when it is most valuable during the day, e.g., late afternoon. The design diverts water from the river to a holding pond/reservoir for most of the day, and then only releases the water through the turbines when electricity is most needed (and saleable for the highest price). Economically it makes sense. But what does this do to the river? It means that once or twice a day, the river downstream experiences a sudden surge of water and sediment.

How does this affect the fish? We don't know. I can tell you that visibility in the river drops to near-zero during one of these surges. I could not see a fish if it were right in front of me in the water. But on the flipside, we did find parents guarding babies during

the non-surge time, evidence that somehow some of the large rainstorms inflict similar, if not identical, surge events on the fish in the river.

Another consideration is that not all rivers contain fishes. Due to the chemical constituents of certain volcanos in Costa Rica, I have heard that rivers flowing off of those volcanos have NEVER had any fish, so damming the river has had no effect on the fish fauna.

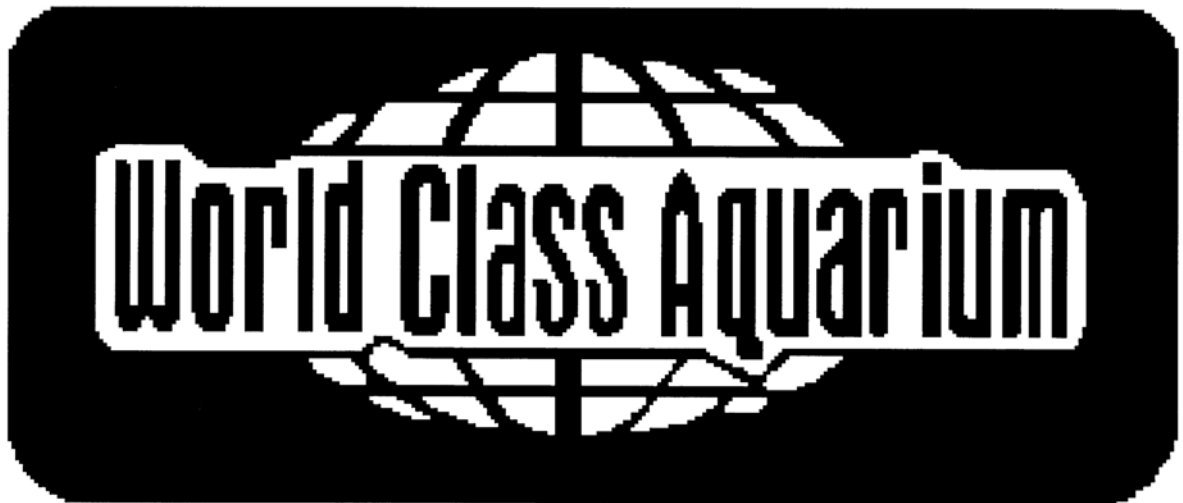
The Balsa Dam, a construction project in the north-central region of Costa Rica, appears to be at least somewhat aware of benefits of rivers other than just hydro power, and is, at least for now, providing very nice whitewater rafting opportunities for nature enthusiasts, much like those available on the American River here in California.

But that is a double-edged sword as well. Rivers often have a seasonal cycle (called the hydrograph),

and dams tend to even this out over the year, both for production of power and also for other activities, like rafting. Indeed this is one of the biggest problems with the Folsom Dam. Because of the Folsom Dam, the American River no longer alternates in flow the way it used to (roaring in the winter, and trickling in the summer), making it much less suitable for native fishes which have evolved to that cycle, yet rather ideal for introduced sunfishes and basses, which appreciate the more moderated and predictable conditions of the current river. This too could become important in Costa Rica. Unfortunately, we do not know enough about how the native cichlids really live in these systems to accurately predict the effects of large-scale alterations. We need to find out, and soon!



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The Sump has a Dolphin pump, I do not recall the model but it has 1 1/2" fittings. The tank itself has 2x 1 1/2" holes drilled for bulkheads on the back. The returns are 1" and drilled from the top.

I've had the pacus for about 17-18 years. They are easy-going fish. I feed spirulina disks, but they usually eat the kids' leftover vegetables, plus occasionally a little meat. They will eat from my hand. I will help move the tank/fish but we should try to do it during the summer if possible. Please call Eric at 631-398-1918.

AN AQUARIST'S JOURNEY

Story and Photos (unless noted) by Rosario LaCorte

Chapter 14

October 21, 1977 marked the part of the journey that I was really excited about. In the past, when Leo Hoigne spent time in my home, we often discussed the possibility of collecting jointly in Venezuela. It was a Saturday, and Leo and I made plans to travel to the Llanos, a huge grassland plains located east of the Andes in Colombia and Venezuela, to search for annual fishes. Leo's expedition to Venezuela had been highly successful, and he discovered some spectacular species. Meticulous and scientific-minded, he knew the area well, and had set up equipment to record both day and night-time temperatures.

Nancy decided to join us so that she could visit their daughter Cookie and their grandchildren, who lived in Valencia. It was a two-hour drive from Caracas to Valencia, where we arrived mid-afternoon. That evening we all enjoyed dining at an outdoor restaurant. Afterward, Leo suggested we get up at 4 AM to prepare for our journey. He said it was about a two-hour trip, and if all went well we should arrive by sunrise.

In the absence of much traffic, Leo sped along at about 70 miles per hour, and sure enough, we reached the first collecting site exactly at dawn, as Leo had predicted. The time was 6:15 AM, and the area was teeming with foxes—I've never seen so many at a single sighting!

Our first stop was at a spot where Leo had discovered some *Pterolebias* (now *Gnatholebias*) *zonatus*. However, the area was now dry, and no fish were to be found. Alongside that spot were some grassy areas with about a foot of water. I could see some characins darting about trying to avoid capture. I made some sweeps with a hand net, and captured several species of characins, including *Moenkhausia dichoura* and *Moenkhausia collettii*. The caudals



Leo Hoigne



Sunrise, on our arrival, where we spent most of the day collecting the specimens shown in this chapter.

were brilliant red! I had always been fond of these fish, and some years earlier I had reproduced quite a few of them. I no longer had any at home, so I looked forward to returning with some.



Moenkhausia collettii

I had gathered a nice cross-section of small tetras from that grassy location, when Leo said, "Why don't you put them back, and we'll return later and re-collect them?" It was hot, and Leo thought the temperature would be against us. It turned out to be a mistake, as we never found them again. It's possible to find fish in large quantities in a given area, then return an hour or so later and find not a single fish. They are constantly foraging for food, and do not remain in one place.

Leo had not been to this area in several years, and he wasn't sure he could find the exact spot where he had discovered *Gnatholebias hoignei*, a fish named in his honor. But Leo was amazing. Even with all the lush new growth, he was still able to find the spot where he had made those wonderful discoveries.

We forged ahead through the thick brush, and came upon a pond in the last stages of evaporation. In the shallow and extremely muddy water, the occupants of the pond became very frightened at our presence, and began excitedly swimming in all directions.



Gnatholebias zonatus



Lianolebias stellifer



Terranotos dolichopterus



Rachovia malculapinnis

Terranotos dolichopterus is an exquisite fish, with the male displaying such incredible finnage that I questioned Leo concerning his feelings upon first capture. He replied that after placing them in a plastic bag he never looked at them until home, where upon seeing them he remarked, "Oh, my! What do we have here?"

Stan Weitzman and John Wourms described *T. dolichopterus* (photo above) after Leo Hoigne's discovery. I met John Wourms at the Aquarium Stock Company in New York when I was in my twenties and John about 18. We became friends because of our mutual interests. He and his mother Mary were frequent visitors to our home, and dear friends. Highly intelligent, John received his Master's degree at Fordham, and his Ph.D. at Stanford. I spoke to John after he had worked with Weitzman in the description of *T. dolichopterus*. His comment was, "I'm not fond of describing fish, and found it boring. I won't get involved any longer."

John had a distinguished career, teaching at Clemson and doing a great deal of work in embryology. His paper on diapause in annual fish is a classic. I was quite proud to have been mentioned in his acknowledgements at the end of the paper. I spoke with him several times at Clemson, where he was Professor Emeritus.

He sailed around the world while at Stanford, and while visiting Tanzania in 1971 did some collecting in the foothills of Mount Kilimanjaro. There they collected what they thought was *Nothobranchius taeniopygus*, but later turned out to be *N. ugandensis* (according to Graham Bell Cross, with whom John collected). However, we cannot be certain that's accurate. John said he sent me several hundred eggs, which were apparently lost in the mail, as they never arrived. He also sent eggs to our mutual friend (and now Dr.) Bruce Turner. Bruce did receive them, but was unsuccessful with them, as they all fungused. Take note of the local grasses John used in his photo below of *N. ugandensis*—probably found alongside a pool. John passed away in 2013, at age 77.





Markiana geayi



Red-bellied piranha (*Pygocentrus nattereri*)



Gnatholebias hoignei



Passiflora

The side of the pond that was closer to the dirt road had a large, concrete drainage tube beneath the road bed, so that water could drain from the opposite side of the road. I decided to go into this sewer line, which was about eight feet in diameter. As I did so, several large bats began to fly about, as I had apparently disturbed their resting place. In my determination to collect fishes, I continued to sweep my net through the water, disregarding the excited bats.

The predominant fish in this pond were the aforementioned *G. hoignei*, discovered by Leo years before. Every single specimen was magnificent, with full and extremely colorful finnage. The other species I found were *Terranatos dolichopterus*, *Rachovia maculipinnis*, and two pairs of *Lianolebias stellifer*. The hand nets were not giving us the numbers we were looking for, so I suggested to Leo that we use the ten-foot seine we had brought along. With that strategy we were able to collect a large number of fish. I wanted to preserve some of the collection for the Smithsonian collection.

Traveling further down the road in search of streams and other small bodies of water, we found a wonderful clear stream, but we found no fish, so we decided to swim. It was very refreshing, as the temperature was in the 90s. As we swam, a large iguana stared down at us, watching. I found a large passiflora vine growing along the stream, with fruit hanging from it. I've always had a soft spot for passiflora, and had one in my fish house for several years. The passion flower was so named by Spanish missionaries in the early 16th century for its unique structure, each part said to represent an aspect of the

passion of Christ. The fruit looked tempting. It did not appear to be ripe, but we took a bite anyway; then decided not to go any further. It was quite bitter.

In another pool we collected more tetras, and a single specimen of *Markiana geayi*. I had never before seen a live specimen, but was familiar with the genus, which also contains *Markiana nigripinnis*, a large characin from Paraguay. We only found a single specimen, but it was deep-bodied, and displayed brilliant red fins. I said, "Leo, I've never seen this fish before, but I know what it is. Have you ever seen it?" Leo responded that he had seen them on occasion, but had no idea what it was. After a few attempts to collect more I decided to return it, as it made no sense to carry only one back home.

After further collecting along the road, we decided to return to our initial collecting spot, hoping to gather more *Moenkhausia collettii* and other interesting characins. I was also interested in a large pool about thirty feet to the right of the area where we had found *M. collettii*. I mentioned to Leo that we should seine that area once so I could attempt to re-collect the species that I had returned earlier.

With a hand net I began to collect a few characins of interest, but not *M. collettii*. While I concentrated on the small pools Leo unraveled the seine, and finally summoned me to give him a hand using it to sweep the pool. It was extremely muddy, making it impossible to see anything in the water.

Shortly after we began our sweep, Leo dropped his net and ran to the bank, shouting to me that a piranha had bitten him above the ankle. He ran to get his shirt, to tie it around his leg. In the meantime I gathered our



Nice looking dentures, though a bit of an underbite. The lips were cut away in these photos to reveal the teeth.

gear and loaded it in the car. Fortunately, bleeding was minimal despite the large and deep wound. It was a scary moment! At that time I could not speak any Spanish, and I didn't know exactly where we were or how to get back and find medical attention for Leo.

I volunteered to drive, but Leo said, "No, I'm fine. I'll be all right." Bleeding remained minimal, and he claimed not to be in pain. Our goal was to return to Valencia as quickly as possible and get medical attention. After several miles the radiator light went on, indicating that the engine was overheating. With all the water we'd encountered, I felt we should be able to find a stream or pool to refill the radiator, but we did not encounter a single body of water. Then I remembered that, preparing for our journey the night before, we had filled a plastic cold-pack and froze it to help keep our liquids and food cold. I mentioned to Leo that by now that cold-pack would have melted, and we could probably get enough water from it to reach Valencia. That solution worked out, so one less thing to worry about. Leo continued to maintain that he wasn't in pain, and there continued to be very little bleeding. I wondered aloud how the doctor would manage to close the wound, and whether a skin graft would be needed. He replied, "That's OK, I'm not a dancing girl, so I'm not much concerned about its appearance."

We finally arrived at the hospital, and as Leo sat on the table, the doctors said they had no idea how to repair the wound. All they could do was to sterilize it and apply a dressing. Nancy arrived at the hospital, and they decided to call their doctor friend



in Caracas, Dr. Alex Weidebach. Caracas, however, was still another two hours away, so we made Leo as comfortable as possible, and set out, arriving in Caracas about midnight.

Dr. Weidebach and a colleague worked on Leo's wound for nearly two hours, while Nancy and I sat in the waiting room, worrying about the outcome, since the bite had left such a gaping hole in his ankle.

Alex later explained that a vertical and a horizontal cut was made, allowing them to pull the four flaps of skin enough to close the opening. Despite this, an opening of one inch or so was still visible. The surgeons told Leo he had to remain in bed for two weeks to allow new skin to grow over and close the wound.

I really felt badly for Leo, as I had traveled the length and breadth of Brazil, and on the last water hole of the entire six-week adventure this unfortunate incident befell him. It was very unsettling to me, and I felt that I was somehow at fault, but both Leo and Nancy were very gracious, and implored me not to feel bad, as "it could have been worse." The pool looked calm, and we certainly had not expected to find piranhas there.

Evidently, during the rainy season that area is a huge floodwater basin, what with the snow melt from the Andes and the heavy rains in the immediate area. This flooding brings many fish to the area. With the dry season comes an evaporation, and many fish become entrapped as the water recedes, leaving many disconnected pools. There they remain, and the piranhas feed on them. This particular pond was



Pool where Leo was bitten.



Same pool a little later in the dry season.

probably devoid of most fish except for the surviving piranhas. The water being extremely muddy, all the piranhas could rely on for hunting was sensing vibrations in the water. The noise caused by Leo and me, walking along the edge preparing the seine, likely attracted them to a possible food source.

One day was left of our six-week journey before our return to the U.S. Stan and Marilyn Weitzman and I, along with Dr. Francisco Mago-Leccia, returned to Codazzi Aquarium, a public aquarium we had visited earlier in our Venezuela stay. It was named for Giovanni Battista Agostino Codazzi Bartolotti (1793-1859). Born in Italy, he served in the Italian military, and was a geographer, cartographer, and naturalist. In Venezuela he is considered a national hero.

The government had constructed this beautiful public aquarium, only to cut funding to operate it on only \$200 per month. It was impossible, and Francisco was putting a lot of effort into an attempt to save it. He even asked us if it was possible to get help from the U.N. in New York. He said we could take anything we wanted back to the U.S. with us. I saw a most large and majestic group of altum angels, but they were simply too large to return with. However, I was able to bring back a few species of small characins. It really was tragic to see the whole gorgeous setup just being allowed to deteriorate into ruin.



The Aquarium Agustin Codazzi. Note the surrounding neglect of the outside landscape due to lack of funding.

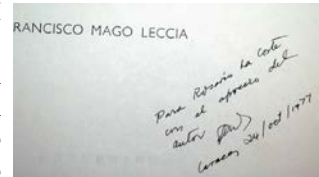
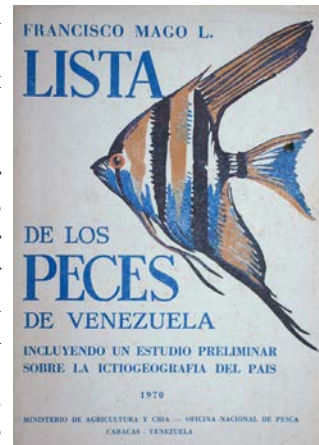


Dr. Francisco Mago-Leccia, with two assistants who accompanied us on our journey in Venezuela. Dr Mago-Leccia (1931-2004) was a distinguished ichthyologist, and among his many duties was the directorsip of Acuario Agustin Codazzi. He was an expert in electric fishes.

Later, we had dinner with Francisco and another scientist from the university, Dr. J. A. Luengo Plaza, who had cared for our collection from the Brazilian leg of our journey. We said our farewells afterward, and packed this collection for the trip home. Then, returning to Leo's home, I packed the specimens that he and I had collected.

Leo said that in December he would return to the pool where he had received the piranha bite, and use a fishing pole to catch the fish that were there. I suggested that he take some of the rotenone along, but he thought it would be more fun fishing for them. The pool would be reduced in size, and since there was no escape route, he felt it wouldn't take long to capture them. In December Leo sent me a slide showing one of the piranhas he had caught, a ruler alongside revealing the fish's twelve-inch length!

I was excited at the prospect of returning home to Jeannie and the children. Seeing them all would be great, and I had many stories to tell them. I also wondered how Jean and number three son Tom had fared with the fish house in my absence. Six weeks was a very long time to ask someone to care for that whole setup. I called Jeannie from Caracas, but did not mention Leo's misfortune with the piranha.



The diamond tetra, *Moenkhausia pittieri*. Although popular at one time, at the time of our journey to Venezuela they were seldom seen. This is one of the species that I returned with from the Codazzi Aquarium. They originally come from Lake Valencia, but at that time it was not a good idea to collect there due to an infestation of *Schistomiasis*, a parasitic worm whose host is a freshwater snail. It infects millions of people in warmer climates. Fortunately, there are effective drugs to fight it. The lake had signs posted, with visual warnings (skull & cross-bones) to avoid the water because of the worm's presence. This photo shows one of the young reared from the specimens that I returned with. It is a handsome fish, which many people never see in its mature state.

The next several months were spent speaking at various aquarium societies, telling them about the six-week sojourn. I had captured many moments on film, so my collection of slides was greatly increased. Looking back, what a fantastic photo journey it would have been had digital cameras been available at that time!



The author collecting *Lianolebias stellifer*.



Leo took this photo. He was bitten on October 27, 1977, and returned to the pool in early December. Using a lead leader he caught this big guy. Before he died I kidded him that the fish looked robust with a full belly; perhaps a little bit of Leo's ankle in there? Perhaps the caption for the photo should be: Is this the one that bit Leo?



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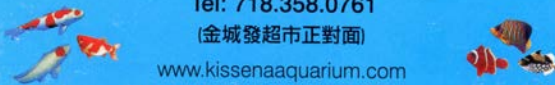
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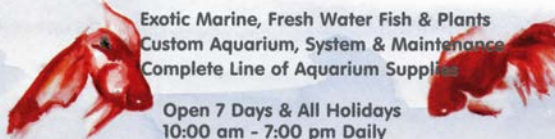
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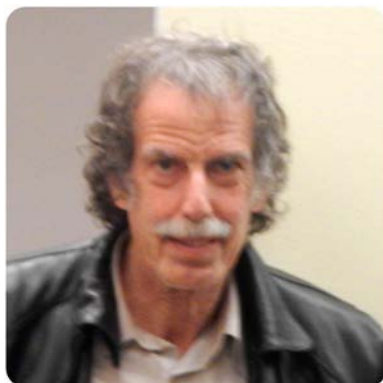


Our esteemed speaker, Richard Pierce, brings us a program on seahorses, seadragons, and pipefish



Joe Ferdenzi presents him with a small token of our appreciation

Welcome to our newest member:



Mark Meyer

Bowl Show Winners:



2nd place: Rich Waizman



1st place: Mario Bengcion



3rd place: Mario Bengcion

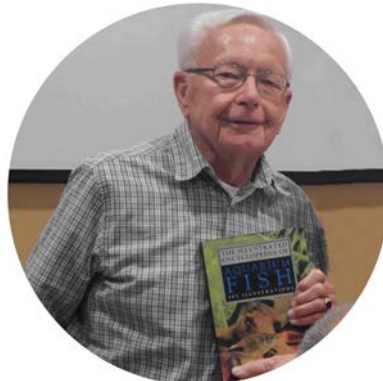
Last Meeting

Photos by Susan Priest

Door Prize Winners:



Donita Maynard



Bill Adams



Al Priest



Boys will be boys!



**Assistant Treasurer,
Ron Wiesenfeld**



**Juan Torres
Planning his purchases**



**Dan Puleo
auctioning off a terrarium**



GCAS Happenings

June

Last Month's Bowl Show Winners:

1 MARIO BENGCIÓN	TRI-COLOR KOI
2 RICHARD WAIZMAN	OB DRAGON BETTA
3 MARIO BENGCIÓN	ALBINO ZEBRA

UNOFFICIAL 2015 BOWL SHOW TOTALS:

MARIO BENGCIÓN	14	RICHARD WAIZMAN	13
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A WARM WELCOME BACK TO RENEWING GCAS MEMBERS CARLOTTI DE JAGER, WARREN FEUER, PETER GOLDFIEN, FLORENCE GOMES, BEN & EMMA HAUS, STEVEN HINSHAW, RON KASMAN, MARK SOBERMAN, AND RICHARD WAIZMAN!

A SPECIAL WELCOME TO NEW GCAS MEMBER MARC MEYERS!

Here are meeting times and locations of some aquarium societies in the Metropolitan New York area:

GREATER CITY AQUARIUM SOCIETY

Next Meeting: July 1, 2015

Speaker: Mark Soberman

Topic: TBD

Meets: 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: June 12, 2015

Event: Lou Ekus

Topic: *The Basics Of Reef Chemistry*

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: June 19, 2015

Speaker: Dr. Matt Sclafani

Topic: *Horseshoe Crabs and Other Invertebrates*

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: June 9, 2015

Speaker: Joe Graffagnino

Topic: *Comparing New and Old World Catfish*

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: June 16, 2015

Speaker: Dr Anthony Mazeroll

Topic: *The Amazon Project*

Meets at: Quality Inn, 10 Polito Ave, Lyndhurst NJ

Contact: NJAS Hotline at (732) 332-1392

Email: tcoletti@obius.jnj.com

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

NORWALK AQUARIUM SOCIETY

Next Meeting: June 18, 2015

Speaker: Mark Denaro, from Anubias Design

Topic: TBD

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/>

Do You Floss?

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.

This month's issue of **Modern Aquarium** has some (to me at least) fairly disturbing photos of piranhas, with lips cut back to show their rather nasty dentition. We've all seen similar photos and I doubt any aquarium hobbyist would intentionally put themselves within biting range of one of these South American predators. But, it's not the image of those sharp, pointed teeth that keeps me up at night, rather it's the image of fish with human-shaped teeth!



Sheepshead, *Archosargus probatocephalus*
Credit: VA Institute of Marine Science (VIMS)

What gives me the willies is seeing photos of the mouth of a common North American marine species that ranges from Massachusetts through to Florida and from the Gulf of Mexico to Brazil. The Sheepshead, *Archosargus probatocephalus*, (also known as a convict fish).

An adult sheepshead has teeth that look too human to be believed, with incisors at the front of the jaw, and molars. It has strong, heavy grinders set in the rear of the jaw too, which are particularly important for crushing the shells of its prey (such as echinoderms, barnacles, clams, crabs and oysters), but they are also notorious for stealing bait.¹

Probably more familiar to aquarium hobbyists is a close relative of the piranha, the pacu, *Piaractus brachipomus*. If looking at the mouth of a piranha or a sheepshead (photo left) is not enough to spook you, then I would like to present another fish mouth whose image may keep you up at night (especially guys, as will soon be evident).

The pacu has been called the "testicle-eating fish." Its powerful jaw and fairly human looking teeth are used to crack tree nuts. "Somewhat terrifyingly, however, the fish have been known to mistake human testicles for tree nuts. Two men in New Guinea reportedly died from blood loss after a Pacu chomped on theirs."²



Mouth of a pacu
Photo from the Belfast Telegraph website

This has given rise to newspaper and newscast headlines such as "Never mind the pollocks: Testicle-eating pacu fish found in Paris could be coming to the UK"³ and "10-Inch Pacu, Testicle-Eating Fish, Caught In Passaic, New Jersey"⁴

Whoa, did that last headline mention "New Jersey?" That's **much** too close for MY comfort! (Governor Christie, be careful where you take your next dip!)

So I leave you with these images to ponder and, until next month **KEEP SMILING!**



References

¹ <http://blogs.scientificamerican.com/running-ponies/the-sheepshead-fish-has-human-teeth-but-its-okay-because-it-wont-give-you-a-psychedelic-crisis/>

² http://www.huffingtonpost.com/2013/09/24/testicle-fish-new-jersey_n_3984181.html

³ <http://www.belfasttelegraph.co.uk/news/world-news/never-mind-the-pollocks-testicleeating-pacu-fish-found-in-paris-could-be-coming-to-the-uk-29556761.html>

⁴ http://www.huffingtonpost.com/2013/09/24/testicle-fish-new-jersey_n_3984181.html



Fin Fun



You Need **More** Than **Fish** And **Water**

..to be a tropical fish hobbyist. You need equipment, hardware, etc. See if you can find all the items used in the aquarium hobby hidden within the word search puzzle below.

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

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CANISTER
CANOPY
CAVE
CHILLER
CONDITIONER
FLAKES
HEATER
IMPELLER
NET
SKIMMER
STAND
SPONGE
SUBSTRATE
THERMOMETER

Getting to Know Seahorses

Solution to our last puzzle:

- 1) B-Some species of seahorses are endangered in nature.
- 2) B-Seahorses are fishes. **AND** C-Seahorses are invertebrates.
- 3) B-Seahorses use their prehensile tails to anchor themselves, and wait for their food to come to them.
- 4) C-Seahorses are suitable for advanced aquarists.
- 5) **ALL are correct!**: A-Males have a "brood pouch"; B-The female transfers her eggs into his brood pouch; C -The male gives birth to the live, upright swimming fry.



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