THE FILTER

Tampa Bay Aquarium Society

25 Years

St. Pete/Tampa Florida

Carassius auratus auratus
Calico Lionhead

TBAS . . . Since 1992

December Meeting:
Christmas Party

December 2017
Volume 27 Issue 5

Photo Mike Jacobs . . . 2017

TAMPA BAY AQUARIUM SOCIETY

"THE FILTER"

Tampa/St. Pete, Florida

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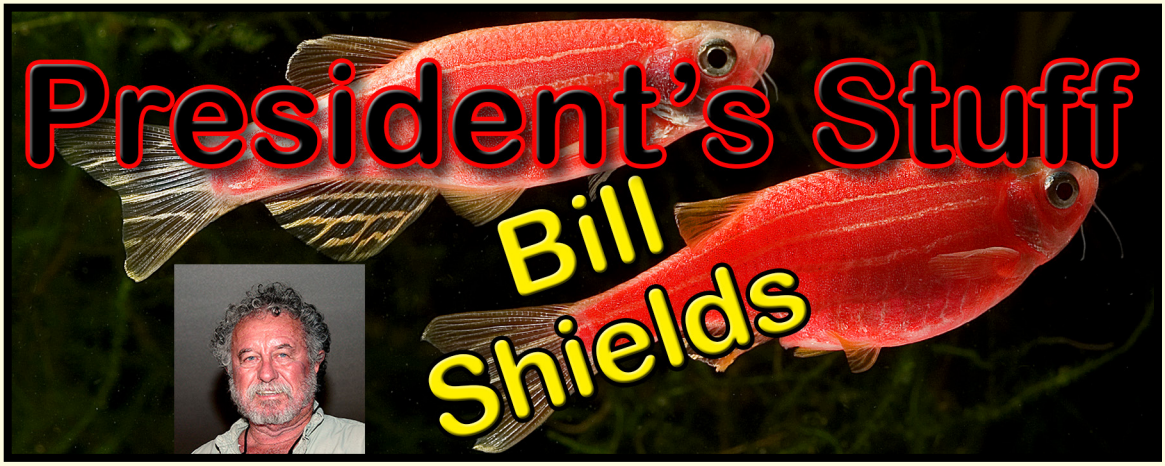

The Holiday season is upon us already. Hopefully everyone had a great Thanksgiving with family and friends. Now it is time to get ready for our annual Christmas Party. Our VP Randy Hahn set up the side dish sign up and we should have plenty of excellent home cooking to enjoy. Dre is arranging for the drinks, ham and turkey and will be making us mashed potatoes.

As we share this meal and good time with friends, we need to remember those less fortunate. So please bring in your nonperishable foods for Metropolitan Ministries food drive and your new unwrapped toys for the Marine Corps Toys for Tots.

Do not forget to get your entries in for the Florida State Fair Aquarium Beautiful Competition. Go to http://www.floridastatefair.com/p/about/435. The deadline is January 5, 2018. If you do not enter the competition stop by the display when you visit the fair and view the set up.

On a sad note as I mentioned at the November meeting, we have lost the North Florida Fish Keepers as they have dissolved their club but still have their face book page up. Hopefully this great bunch of fish keepers will reform and start a new organization.

If you are unable to make the Christmas Party, I'll take this opportunity to wish you all a Merry Christmas and a safe and prosperous New Year. Best Fishes!

Bill

Bill Shields, President, TBAS

Piaractus brachypomus
Albino Red Belly Pacu
Photo by Mike Jacobs 2017

(ED: “Permission granted for nonprofit reproduction or duplication of photos and text in entirety with proper credit for learning purposes only. NOTE: All photos by author.” A VERY nifty interesing article.)

Berkeley Springs, West Virginia Feral Guppies

by Alan S. Bias

Berkeley Springs Wild-Type Males

INTRODUCTION

When it comes to collecting feral populations of Poecilia reticulata in North America, West Virginia is not one of the first places that come to mind. While many Guppy enthusiasts are aware of Florida feral ditch populations derived commercial farm escapees, few realize that self-sustaining populations exist in thermal spring environments throughout the United States. Conditions in each of these thermal locations can be rather harsh for a species evolved in a tropical setting. Overall, size of habitable range is normally limited by temperature extremes, predation, and water chemistry.

Most of these sites have reliable sources suggesting initial dates of introduction ranging from the late 1940’s - 1960’s. In general, it is believed populations derive from aquarium based stocks and not wild-caught individuals. Based on this knowledge, it is safe to assume that foundation stocks consisted of Wild-type, Short-tails, Swordtails and early Veil tails bred in aquariums.

Berkeley Springs Wild-Type Male

In some locations habitation is limited to pools near thermal discharge at the springs source, or just below when water is cooled to maximum survivable

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temperatures. In others habitation will extend downstream to a point where minimum survivable temperature are no longer maintained during winter extremes. Fish that disperse or are born below this point will perish in winter.

Just as temperature restricts these feral populations, so does predation. In some sites predation consists of local native species of fish, birds and insects, while in others it may include a host of introduced South American, Central American and African Cichlids. Often various species of Mollies, Platys, Gambusia are also to be found. The presence of Gambusia in itself will greatly restrict Guppy population levels.

Many thermal springs have one thing in common, that being extremes in chemical composition of output water. Often water is very hard with high Ph levels. To include high concentrations of minerals not typically found in South and Central American waters. While introduced Guppy populations survive, they may do so under great duress.

A few states that come to mind with thriving thermal populations of Guppies are Nevada, Wyoming, Montana, Idaho, Texas, Connecticut, Colorado, Wisconsin and West Virginia. Yes, West Virginia has a thriving population of feral Guppies at Berkeley Springs State Park in Morgan County. For further location info and photos: http://www.berkeleyspringssp.com/ or http://berkeleysprings.com/history-berkeley-springs/ .

DISCUSSION

Berkeley Springs is typical of many cold or hot springs found in West Virginia. It is considered a “Silica-rock” spring system. As opposed to being fed by an underground aquifer, surface water percolates through Oriskany Sandstone formations before returning to the surface. Unlike many thermal springs arising in decomposed granite or limestone country, those fed through Silica contain very low levels of dissolved solids. Yet, Berkeley Springs water is very highly mineralized.

The exact heat source for Berkeley Springs has never been completely identified. Water exits the spring at a temperature of 74.3^0 F. Compared to most geothermal springs this is rather “lukewarm”. An average of 1200 gallons per minute flows from the spring year round, and varies with seasonal discharge estimates as high as 2000 gallons per minute. Water leaving the spring stream flows immediately into Warm Spring Run. The year round Feral Guppy population is limited to this short section of spring stream. Warm Spring Run in turn flows into the Potomac River after a journey of about six miles.

Best estimates for establishment of the Berkeley Springs Feral Guppy population sets the date just after World War II, in the mid 1940’s, based on early observations of park staff and visitors. This is quite a bit earlier than documented thermal spring stockings in Western States. However, does not rule out later

subsequent introductions. While the presence of Guppies at an earlier date is feasible, populations would have been destroyed or decimated by a series of catastrophic floods, between 1936-9, which inundated the spring and spring stream. A flood control project initiated between 1955-61 has eliminated much seasonal flooding of the spring stream inhabited by Guppies. Yet, periodic flooding of the park and spring stream still occurs. No doubt, drastically reducing Guppy populations.

Berkeley Springs Guppies

Being a “warm water” stream, and based on migration studies by researchers, it is feasible that Guppies could traverse downstream into Warm Spring Run. Either by natural dispersal or during prior referenced warm weather flooding. Numbers would be small and heavily preyed upon. As you exit the spring stream and move downstream predation by native species would increase. Some commonly found predators would include Stonefly, Caddisfly, Water Beetles, Crayfish, Sunfish, Bass, Catfish, Pickerel, Shiners, Suckers, and Bullhead Catfish. With the return of cold weather, dispersed individuals would perish.

Today, the springs and discharge stream little resemble that of former times. The stream is heavily channelized with rock retaining walls, paved walking trails, and small bridges. Water depth is rather consistent, to seasonal flow, within the stream bed itself. Most variation is in the form of deeper pools that form underneath bridges.

PHENOTYPICAL OBSERVATIONS

As with other thermal stockings, assumptions can be made based on the time of stocking. Founding members of the Berkeley Springs Guppy population would have likely been of wild-type, swordtail, and possible early Veil tail available in the 1940’s. Guppies are found the entire length of the spring stream in great numbers. Some variation in both body type and age structure can be found in the upper and lower portions of the stream, and deeper pools. Younger fish and

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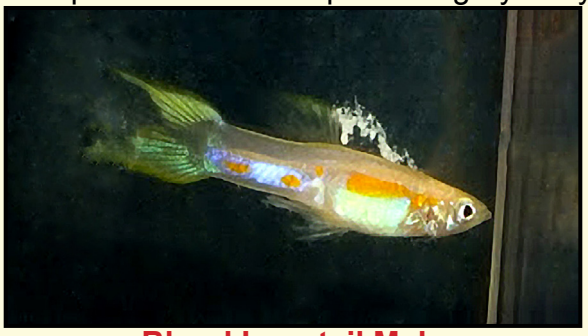
fry are commonly found hiding in plant growth along the stream bank. Middle ages fish the length of the stream. Older fish residing in deeper pools. Today clear roundtails, doubleswords, topswords, lyretail, Wingean wild-type finnage and ragged veil types can be found. Females for the most part all appear color / tail neutral or express Flavis (Fla). With notable exceptions being expression of topsword and occasional single dark melanophore spot in caudal.

Flavis (Fla) Female

Metal Gold (Mg) Female with Black Caudal Spot

As a result of high flow rate of the spring stream, both sexes are much longer and more streamlined than would be expected in a “typical” feral population. While predominantly wild-type grey body, a portion of the population is blond (b). Initial observations of collected fish suggest predation has an effect on overall age, thus size, of blond specimen’s as compared to grey body fish.



Blond Lyre-tail Male

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Both sexes can express Metal Gold (Mg) in heterozygous and homozygous states. As in many wild or feral Guppy populations Purple Body Mutation (Pb) is prevalent. Expression of yellow in finnage & body from Pauper (Pa) / Cinnamomeus (Ci) traits is also common. The latter not commonly found in modern domestic or feral populations, thus indicative of an early stocking date.

Males expressing Pauper (Pa)/Cinnamomeus (Ci)

Overall, reflective qualities of the population are not what I would describe as “vibrant.” Still, iridescence is to be found in many males. As in this highly reflective reticulata male who clearly exhibits a “reflective dorsal spot”. This is another marker for potential verification of a very early stocking date. For further reading on the origins of iridescence in modern Domestic Guppies: http://www.pr.bioflux.com.ro/docs/2013.22-39.pdf.

Iridescent Male with Reflective Dorsal Spot

As Guppies are a non-endemic species collection of them at Berkeley Springs is not discouraged. In fact, children wading with nets are not only a common sight, but also one of the top predators. So get there early in the morning if you are a serious collector. As a result of all the human traffic this population exhibits a very high “fright or flight” response to movement from above, and will readily jump out of the water. So covered tanks &/or reduced water levels are recommended.

On a final note, I would like to mention this population also appears to

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suffer from a higher level of parasitic worm infestation than most. Possibly as a result of duress from less than optimal environmental conditions or maximum summer population levels? While I have not yet put any under the microscope, be prepared to cull your collection when you arrive home and medicate those retained accordingly.

It should be noted that several other introduced species have been reported at Berkeley Springs, to include Plecostomus and Zebra Danio.

Acknowledgements

Many thanks to my friend, and fellow collector / breeder Tom Coggins (Missouri) for this recent collection. Tom arrived at Berkeley Springs Park at 5:30 a.m. after leaving New Jersey at 2:00 a.m. to collect for me. Arriving at my Southern WV home around 2:00 p.m. with a bucket full to select from. Tom will be collecting feral Guppies this summer from both McCauley & Rogers Springs, Nevada. It will be interesting to see his results.

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Fossorochromis rostratus **. . . Rostratus Fossie**

photo: Mike Jacobs 2017

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NUTRITION - Part 3

aquaresearchcenter.com

by Joe Gargas

NATURAL SOURCES OF VITAMINES

VITAMIN A . . . egg yolk, green algae, fish liver, small crustacea
VITAMIN D . . . earth worms, tubiflex, zooplankton, algae, egg yolk, shrimp, fish liver
VITAMIN E . . . green algae, lettuce, egg yolk
VITAMIN K . . . beef liver, lettuce
VITAMIN B_1 . . . green plants, gravel algae,yeast, kidneys, fish flesh
VITAMIN B_2/B_6 . . . beef heart, beef liver, yeast, kidneys, muscle tissue
VITAMIN C . . . green algae, lettuce, water plants, beeh heart, fish roe,
Niacin: yeast, liver, kidneys, muscle tissue

WATER SOLUBLE VITAMINS

In the vitamin B group, there are various vitamins and factors that over-lap and have opposite effects - their multiple biological limits are often difficult to determIne.

Vitamin B_1 is important in the breaking down of carbohydrates; a deficiency has little effect, since it is formed through the activity of bacteria in the intestine. During a large increase in metabolism though, one must pay special attention to the vitamin B_1 requirement, which is widely found in green plants.

Vitamin B_2 is best thought of as ‘’B_2 complex” since there are other factors involved. During a deficiency, there is a cessation of growth and lenticular turbidity. The content of this vitamin is particularly high in wet and dried yeast.

During a deficiency of Niacin (nicotinic acid amine), diseases of the skin and stomach and inflammation of the intestine occur. The same is true for Vitamin B_6 and Panthothenic Acid. Once again, yeast is rich in these vitamins.

Vitamin B_{12}, or animal protein factor, has the effect of a growth factor. During a deficiency, bacterial synthesis in the intestinal tract is impaired. A deficiency can also cause inadequate blood formation.

A heavy addition of vitamin B complex is necessary when fish are treated with antibiotics, tetracycline or oxytetracycline, since the intestinal flora are extensively killed off by such treatment.

Myo-Inosit (Meso-Inosit) is a biological factor that is necessary for the growth of various micro-organisms together with other factors. As a liver-protecting

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agent, it restricts fatty degeneration of the liver from toxic substances.

Vitamin C (ascorbic acid) occurs in green plants and water plants as well as in the intestinal tract contents of feed animals (plant plankton). Plant-eating fish may be capable of generating some of their vitamin C requirement. It is a growth requirement and it develops the defenses against infection. A deficiency can lead to deformation of the gill flap, among other things.

There is still only a little known about how or what the composition of a vitamin affects. A vitamin can be rapidly oxidized by irradiation with light and become ineffective. Filtration over fresh activated carbon should be avoided, and UV lamps should be shut off when a vitamin complex is given in the food or water, since loss of the vitamin can occur.

When purchasing food for tropical fish, pay attention to the vitamins that are added to the food. Watch for the type of vitamin C that is added, since it should be stabilized. Remember that any vitamins added to frozen meats must have a protective coating, otherwise the enzymes in the meat will break the vitamins down and render them ineffective.

Normally, fish do not suffer from vitamin deficiencies if they are given a varied diet that is enriched with vitamins and minerals by the manufacturer. There are also many vitamins on the market that should be given now and then.

YOU DON'T WANT TO MISS THE TBAS CHRISTMAS PARTY DECEMBER 11, 2017

FOOD - FUN - GOOD PEOPLE - DID I MENTION FOOD, FOOD, FOOD . . . ☺ ☺ ☺ !!

Normal meeting time, place!

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MONTHLY BOWL SHOW

January
1)
2) None - Plant Auction

February
1) Male Betta Splenden
(single fish)
2) Open

March
1) Tetras, Barbs, Rasbora
2) Cichlids

April
1) Platies
2) Guppies

May
No Bowl Show
Swap Meet

June
1) Corydoras
2) Anabantoids no Bettas

July
1) Arts & Crafts (hand made)
2) Fish "T" Shirt (must be worn)
3) Aquatic Photos
(personally taken)

August
1) Mollies
2) Rainbows

September
1) Swordtails
2) Pleco/Sucker type fish

October
1) Dwarf Cichilds
2) Angelfish

November
1) Goldfish & Koi
2) Invertebrates (Fresh or Salt)

December
No Bowl Show . . . Christmas Party and the 2016 Results of the Bowl Show!!!

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NAME			TOTAL

2017 FINAL RESULTS GIVEN AT CHRISTMAS PARTY!!

http://www.sks.aka.org

Did you ever think of KILLIFISH??? Come find out about them at the SKS meetings!!! See the ad to the left!

Coastal Aquarium Society

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http://coastalaquariumsociety.com

You won't be sorry you came!

Directions are on the website.

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MEMBERSHIP DUES!!!!

Membership Dues for TBAS are due on the anniversary of your sign-up date every year. Please make sure you check the "sign-in" list on the table at every meeting to check your "Dues-Date" . . . Thanks!!!

USE PAYPAL ON THE TBAS WEBSITE . . . TBAS1.COM . . . !!!!!

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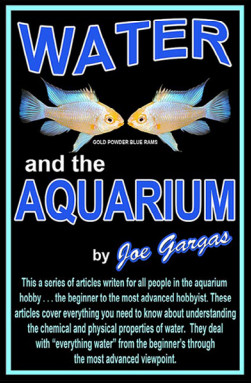

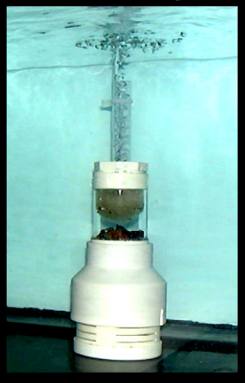
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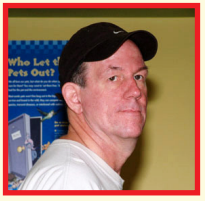

Al Starkey

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St. Pete/Tampa, Florida

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