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Greater City Aquarium Society - New York

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Series III Vol. XXVIII, No. 3 May, 2021

ON THE COVER

Our cover photo this month features a blue male *Pachypanchax patriciae*. For more information on keeping this and other beautiful killies of mysterious origin, see Joseph Ferdenzi's article, "Island Killifish," on page 7.

Photo by Dr. Paul Loiselle

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From the Editor

by Dan Radebaugh

I'm tired of talking about Covid-19. Marsha and I have both had our shots, as have a good number of our members. Being old coots sometimes has advantages. Hopefully now it's just a question of how rapidly the rest of the population will be sufficiently immunized to allow us all to return to a more boring existence—though sitting around watching TV reruns all day hasn't exactly been over-stimulating.

I have to say that all the 'anti-vax' people make me wonder about our collective sanity. You have a group (or groups) of folks who seem to think that this whole situation was something dreamt up by people who have already been oppressing them in order to do further bad things to them. It is undeniable that our government has a well-documented history of undisclosed "research" on unwitting subjects, many (though not all) of whom were in minority communities. But in this present case I think it is telling that the "power elite" whom these folks so distrust have been making sure that *they* get this vaccination (as well as novel treatments) *first*—not last.

One of our local PBS stations the other night broadcast back-to-back films by David Attenborough. The first was titled "Extinction—The Facts," and the second was "Climate—The Facts." I assume that the second was as scientifically solid as the first, but I couldn't make it all the way through the first one, let alone both. Just too depressing. What I found most disturbing was not the data that Mr. Attenborough so painstakingly presented, or even the projected consequences. What most bothered me was that this stuff is *not news*. We've been talking about it for decades! What we have *not* done is to effectively address it. We did successfully address our part in the destruction of the ozone layer, and that process of repair is still ongoing. We have however *not* yet



done much at all about the matter of global warming. It's going to take time and effort, and even if we do begin addressing it, there is a serious likelihood that our efforts will be too little and too late. Add to that the elephant in the room that no one even discusses any more—population control. It somehow has to be done! We can't escape to Mars in sufficient numbers to ensure a future. Even the appalling slaughter of the two World Wars didn't seem to put a dent in the pace of human population growth. We countered with the baby boom. When I was in elementary school the U.S. population was about 180 million. Now it's nearly twice that. The math just doesn't look good for us.

Years back there were lots of dystopian books and movies having to do with this theme, but we seem now to have just decided to ignore all of that, concentrate on making more money, and trust technology to save us, which I seem to recall was a recurring approach in much of that dystopian literature, though mostly not a very effective one.

A little later in this issue (See Abigail Weinberg's article on page 13), there is some discussion of the CARES program, and how it will play out for those endangered species in the long run. Well, it seems to me that without effective and timely action, the most likely scenario for the long run is that we'll *all*—fish, fowl, or human, simply be dead.





GCAS Programs

2021

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

March 3	Joseph Ferdenzi <i>Lake Tanganyika Cichlids (via Zoom)</i>
April 7	Dr. Richard Pierce <i>A Second Look at Tetras</i>
May 5	Joe Graffagnino <i>A Pond Grew In Brooklyn</i>
June 2	Markita Savage <i>The Xiphophorus Genetic Stock Center</i>
July 7	Sal Silvestri TBA
August 4	TBA TBA
September 1	TBA TBA
October 6	TBA TBA
November 3	TBA
December 1	TBA

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The Greater City Aquarium Society meets every month except January and February. Members receive notice of meetings in the mail or by email. For more information, contact: Dan Radebaugh at (718) 458-8437, email gcas@earthlink.net, or fax to (347) 379-4984. For more information about our club or to see previous issues of *Modern Aquarium*, you can also go to our Internet Home Page at <http://www.greatercity.net>, <http://www.greatercity.org>, or <http://www.greatercity.com>.

President's Message

by Horst Gerber

We approach our 100th anniversary while still suffering from the second year of this infamous pandemic. We remain hopeful that we can resume our in-person meetings sometime later this year. In the meantime, Dan Radebaugh continues to publish and email this glorious magazine, and Jason Kerner has enabled us to host Zoom meetings with informative speakers and a chance to see and talk with one another.

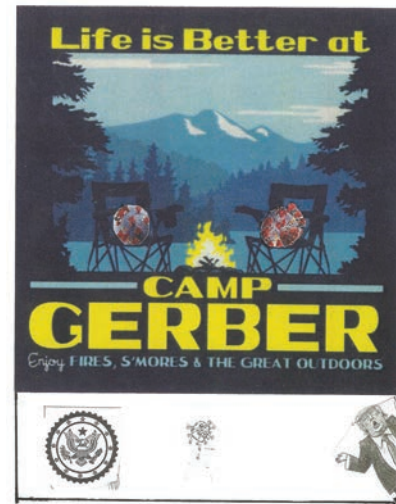
Our society, like everyone and everything else, does the best it can to continue to be relevant in these very trying times. I know that our members continue to support the club and will be there when we resume live meetings. That is certainly something to look forward to. I know that I certainly do! For now, please enjoy what we are able to bring you, and most importantly, stay safe and well!

To all non-believers, we *are* going to make it in 2022. 100 years of informative information for fish enthusiasts! Just look at the new NEC article awards! I don't want to seem to brag, but how many awards did we take of the whole shebang?

Now, back to my May Prez message. Was it Plan ABC? Well, what exactly is Plan ABC? Well, Plan A is that I get the message to Dan in a reasonable amount of time. Unfortunately that did not happen. Nor did parts B and C, as detailed below. I wrote and finished both May and June in plenty of time, except for a few finishing sentences. My wife read them and added her two cents worth, but they weren't quite my style, so I would use some of her input, and then put the piece to one side. Somewhere I'm sure it still exists, but after days of searching I have no idea where that "one side" may be. I had two days' time to get it to Dan before going on vacation, but the ghost of Bobby McGee, who lives in my house, had hidden them from mortal view. After hours of searching to no avail I gave up and decided that Bobby probably needed extra time to read them before returning them to me. So my vacation was shortened by a day to find them—to no avail!

Returning from Cape Cod to institute a new search yielded no result. That brought us to Plan B, which was to make Dan's life easier by making the Prez message a cartoon! Well, that turned out to be another fiasco—I would have needed the cartoon size at least doubled. I don't know if I can explain it right here, but in short it took me four attempts to produce that copy. By that time it was late in the evening, and we went to Plan C—I asked Joe Ferdenzi to write it for me, figuring that with his 19 years of experience writing President's Messages he'd be able to just crank it right out, much faster than Prez Gerber could. I even told Joe, "Just use one of your old Prez Messages. No one will remember what you wrote years and years ago."

So the beginning paragraphs of this message were provided by Joe, who uncannily picked up the most useful bits of the situation this virus has left us in, and affirms that we hope and believe that we will soon be able to return to live meetings (Hooray!!!). So keep checking your emails from us, as well as notices on our Web Site, and we'll let you know when we'll be able to resume our in-person meetings, with live speakers, auctions, and all the other things that we didn't realize how much we'd miss!





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The NEC 2020

Articles Competition

OPEN CATEGORY

1. Anubias	Joseph Ferdenzi	Modern Aquarium	GCAS*
2. Why Latin	Joel Antkowiak	Tank Tales	ACLC**
3. Aquascaping Without Plants	Joseph Ferdenzi	Modern Aquarium	GCAS*

BREEDING CATEGORY

1. <i>Corydoras atropersonatus</i>	Don Kinyon	Tank Tales	ACLC**
2. Wild Angels	Jules Birnbaum	Modern Aquarium	GCAS*
3. <i>Danakilia Sp. shukoray</i>	Joseph Graffagnino	Modern Aquarium	GCAS*

HUMOR

1. Cartoon Caption	Ron Webb	Modern Aquarium	GCAS*
2. Cartoon Caption	Ron Webb	Modern Aquarium	GCAS*
3. None			

CONTINUING COLUMNS

1. The Undergravel Reporter	The Undergravel Reporter	Modern Aquarium	GCAS*
2. President's Message	Horst Gerber	Modern Aquarium	GCAS*
3. From The Editor	Dan Radebaugh	Modern Aquarium	GCAS*

JUNIOR AUTHOR

1. None
2. None
3. None

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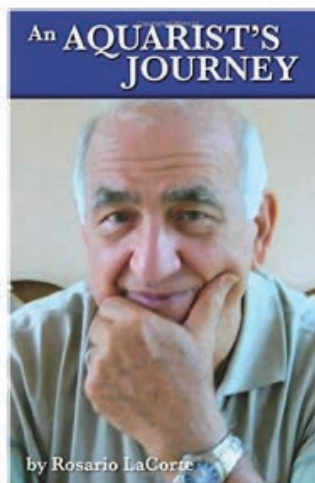
**Aquarium Club of Lancaster County

An Aquarist's Journey

Rosario La Corte is one of the world's leading authorities on breeding fish and he has written numerous articles and books, contributing greatly to our understanding of fish and their habits.

Now, for the first time, here is a compilation of his travels, adventures, successes (and, very occasional failures) all relating to collecting, keeping, and breeding fish, and in his own words (and edited by Modern Aquarium's Editor, Dan Radebaugh).

Available in softcover at Amazon.com



Island Killifish

by Joseph Ferdenzi



Pachypanchax patriciae blue male
Photo by Dr. Paul Loiselle

Most of the members of the Greater City Aquarium Society live on an island. If you live in Queens County, Kings County (Brooklyn), Nassau County, or Suffolk County, you live on Long Island. If you live in Manhattan (New York County) or Staten Island (Richmond County), you likewise live on an island. Even some people from Bronx County live on an island—indeed, our esteemed President Horst Gerber lives on an island: City Island. Given these facts, it is understandable if you were to think that the title of this article refers to the killifish of our own native waters (there are several species of such killifish). But no, the subjects of this article are some of the killifish I am currently keeping that are endemic to (native only to) certain tropical islands.

These killifish are all easy to keep, even though you will most likely not find them in your local fish store. Even on the internet they are not easy to find, yet their beauty and rarity make them worth the search. And because their distribution in the wild is limited to their island homes, most are threatened or endangered; thus their captive husbandry is an important element in their conservation.

I will begin with my killifish that is from the New World, *Cubanichthys pengelleyi*, sometimes called the Jamaican pupfish. As the name indicates, it comes from the island of Jamaica. It is only found in some of the freshwater habitats of that island.

While its colors are not particularly gaudy, it is nevertheless a very attractive fish. The males are larger (up to about 2.5 inches), and have more pronounced finnage, but have more or less the same coloration as females. Easy to keep, they eat any standard aquarium fare. Mine are kept as a group of approximately 10-12 individuals in a planted 15-gallon tank. The water has a pH of about 7.2, and the temperature fluctuates between 74° and 77° F.

They are not quarrelsome, and breed by laying eggs on whatever surface they find to their liking (including the inlet slots of the box filter in their tank). The fry are fairly large after hatching, and will eat just about anything, including finely crushed flaked food. Growth of course depends on how well you feed them, but generally they grow fairly quickly, and they are as long lived as many other tropical fish.



Cubanichthys pengelleyi pair
Photo by Dr. Anthony Terceira

I now shift to the Old World, and in particular to a small island off the coast of West Africa by the name of Bioko, part of Equatorial Guinea. From it comes one endemic killifish, *Fundulopanchax oeseri* (it does not have a common name—it is not common). The males of this species have brightly colored blue-green stripes and an elongate shape reaching to about 4 inches. The females are a drab brown with clear fins.

These fish are from freshwater, and they prefer it alkaline, with a temperature of around 74° to 75° F. In nature they normally will lay their eggs in the substrate or on plants, but in the aquarium they are more than willing to lay their eggs in mops made of synthetic yarn. You can easily keep a trio (a male and two females) in a 5-gallon tank or keep a dozen or more in a 10-gallon tank. I do not find adult males to be particularly quarrelsome if you have a lot of them in the same tank.

The fish are aggressive eaters, and will consume any standard aquarium food. They are certainly not fussy. When I have well-fed adults, my preferred method for breeding them is to place a pair in a plastic shoebox with water from their home tank, along with a mop. After a few days you can start picking eggs. These take about 14 days to incubate. When they hatch, the fry will immediately take newly-hatched brine shrimp, but other kinds of fry food will suffice.

My only word of warning for keeping *oeseri* is one which I repeat emphatically for anyone who desires to keep any killifish: they are jumpers! The slightest gap or hole in the cover of any tank means that eventually you will have missing or dead killifish. Over the years I have found that most of the people to whom I give this warning underestimate the ability of killifish to find openings in their tank's cover. Therefore, for example, a tank with an outside hang-on filter is a decided "no-no," because you will never

be able to fully block the opening required for the filter's water flow.

Next, I turn to a killifish that comes from an island off the east coast of Africa, Zanzibar, which is a part of the nation of Tanzania. On this island we find the only killifish in this article that is known as an "annual"—that is, a killifish, that has a seasonal lifespan in the wild wherein eggs are laid in the substrate of a temporary pool of water and which then survive a drying period (during which the adults who laid them perish), only to hatch when the rains return and fill up their habitat, whereupon the cycle of life starts all over again.

This amazing life cycle, which is most commonly found among tropical killifish, has unfortunately led to a very persistent myth: that all tropical killifish are annuals—a myth that is just that, a myth. As my discussion of *pengelleyi*, *oeseri*, and those to follow will reveal, most killifish kept by hobbyists are not "annuals."

However, that "annual" description, when it does apply, should not scare any true hobbyist. Instead it should be welcomed, because it entails one of the most delightful experiences you can have in our hobby. This is all the more so with our killifish from Zanzibar, *Nothobranchius guentheri*. There are many species of *Nothobranchius*, they all come from Africa, and they are all "annuals." In the vast majority of these, the males have colors that are unsurpassed in the fish hobby, and this includes *guentheri*, with their sky-blue body and vivid red caudal fin. Fortunately for us hobbyists, *guentheri* have been in the hobby for decades, and we've learned that it is not difficult to breed. Females, as is the case with most annual killies, are brown or beige with clear fins.

A trio of *guentheri* can easily be accommodated in a 5-gallon tank. The water should be alkaline, with



Fundulopanchax oeseri - Bioko River
Photo by Dr. Anthony Terceira



Nothobranchius guentheri - Zanzibar 2007
Photo by Dt. Anthony Terceira

a tablespoon of salt for every five gallons of water, and kept at around 75° F. My preferred way of breeding them is to leave a small, clear glass bowl in their tank that has been filled about one quarter of the way with a previously prepared mixture of peat moss (from potting pellets) and coconut fiber (often sold as reptile bedding). The mixture is prepared by wetting it in the glass bowl until it becomes waterlogged and sinks. Then the bowl is placed into the *guentheri* tank. The male will hover over this bowl to attract females into it, and the eggs are deposited in the mixture. Every four weeks or so, dump the moss/coconut mixture into a fine-mesh net, squeeze it hard until it stops dripping water, and then place it in a small airtight plastic container. After three months of having kept it at a more or less constant temperature of 75° to 78° F, place the mixture into a small tank and pour aged water on it until you've filled half of the tank. Within 24 hours you should see a lot of baby fish. What a tremendous experience!

Now I come to the only arguably difficult part of raising and keeping "annuals" for some hobbyists: *guentheri* fry and adults will usually ignore food unless it is alive. Forget flakes and pellets. On occasion adults may accept some frozen items, but that certainly won't do for the fry. However, this supposed difficulty can easily be overcome by hatching brine shrimp cysts. These cysts are readily available and easy to hatch. Most *Nothobranchius*, including *guentheri*, can go from fry to adults on this one food. Even as adults they will thrive on newly-hatched brine shrimp.

My next group of killifish comes from the truly unique island-world Madagascar, which is situated in the Indian Ocean off the coast of east Africa. In Madagascar lives a genus of killifish found nowhere else, except for one species found on the nearby Seychelles islands. This genus is called *Pachypanchax*.

I presently have four species, one of which has not been scientifically described.

These killifish, while not as brightly colored as many of the African killies, are nonetheless very attractive and, best of all, very easy to maintain and breed. As with most killifish, the males tend to be larger, with more pronounced coloration and finnage. They usually top out at around 4 inches. Females have fainter coloration, but unlike most killifish females, they do have some.

These *Pachypanchax* are about as easy and fuss-free to keep as tropical fish can get. I keep all of mine by species in groups, in 10-gallon tanks. I have never used anything larger. Their water is kept at about 7.2 pH and 75° F. I keep them in planted tanks with little or no gravel, hence the plants are ones that don't need to be rooted, such as *Anubias*, Java Fern, Java Moss, and floating plants such as Hornwort and *Najas*. I also keep an artificial spawning mop in each tank—the kind of mop that has a cork or other floating device attached to the top. I sometimes pick eggs from the mop and incubate them in water for two weeks, or I just look for fry swimming among the floating plants. I find that the adults will generally not eat their fry—that is another attribute that makes them easy to keep and breed.

Another endearing attribute is that these fish, including the fry, will eat any appropriately sized food, and they have hearty appetites. Fed a good diet and kept in clean water, these fish will breed for years. Moreover, unlike most killifish, which are actually too shy and slow for many community aquariums, these *Pachypanchax* are ideal candidates for a community aquarium of similarly sized fish.

The four species I have been keeping for a number of years are *patriciae*, *sakaramyi*, *sparksorum*, and an undescribed species that goes by the name

“Sofia.” Some of these species come in varying color forms, such as blue or red. While their shapes are very similar, they have features that make each species distinctive. Nevertheless, you should not keep more than one species per tank, as I have no doubt that they



would easily hybridize. This warning also applies to every other genus of killifish—females of a given genus are often very difficult to distinguish.

For reasons I cannot altogether explain, I find that fish found only on one island in the world are



fascinating. Perhaps that fascination is engendered by the mystery of how they came to be present solely on that one island. Perhaps it’s a romantic notion having to do with exotic “lost worlds”—remember that King Kong came from the mysterious Skull Island. Whatever the reasons, I feel privileged to be the caretaker of my beautiful island killifish.



Author’s note: I wish to thank my long-time friends, Drs. Anthony Terceira and Paul Loiselle, for supplying the superb photos that I have used to illustrate this article.



Corydoras schultzei

The Black Cory

by Joseph Graffagnino



My friend Frank Nell brought a bag of black *Corydoras* catfish to a North Jersey Aquarium Society meeting. I commented that the species looked beautiful, and he asked if I wanted the breeding group when he was finished with them. I thought it must be either Christmas or my birthday (it was neither), and I said, “sure!” At the following meeting Frank handed me a bag of eight adult black *Corydoras schultzei*. I was very excited about getting these rare but popular catfish.

When I returned home I placed the group in a 10-gallon tank with a corner filter and an artificial yarn mop. Four days later the group spawned. I was amazed—I’d never had a species that laid eggs that quickly. There were eggs everywhere! On the back and rear sides of the glass tank, on the corner filter and in the floating mop. There were more than 100 eggs that I moved to a hatchery. Within a couple of days all but four eggs fungused. Then eleven days later they laid a dozen more eggs. Most hatched, but the fry were weak and died off. 70 days later they spawned again, because two days before I had performed a 90% water change with cooler water and fed them frozen bloodworms. I moved the eggs to a hatchery, and four days later they hatched. The water temperature was 73-74 degrees Fahrenheit with a pH of 6.3.

When the fry hatched they were clear to white. Three days later they began to turn black. I counted 45 fry trying to hop around. They grew quickly on microworms and frozen rotifers. After a couple of weeks, I moved them to a 10-gallon tank so they could grow out at a faster rate. Their bodies were jet black, but the fins were a brownish-red.

As with all *Corydoras* species, the females are larger, and wider in the abdominal area. Females can

reach 3 inches, and males 2 to 2 ½ inches. These are very peaceful fish that enjoy any food, be it flakes, pellets, live or frozen vegetable or meat types. This species does require good filter maintenance and regular water changes. Sand or rounded pebble gravel are good, or use a bare-bottom tank so their barbels won’t be injured or infected. All *Corydoras* are schooling fish, so a group of 6-8 would be ideal. Also, a two or three to one ratio of males to females is best if you’re looking to spawn them.

The black color of this species was aquarium developed, produced by a German aquarist in the early 1990s and then forwarded to commercial fish breeders in the Czech Republic. There is another type of black *Corydoras* species, *C. venezuelanus* black, which is a wild form of *C. venezuelanus*. These are not the same as the black strain of *C. schultzei*. The difference between the two species is that the black *schultzei* has reddish fins that darken as they get older, while the black form of *C. venezuelanus* has a red adipose fin



(the small fin between the dorsal, or top fin, and the tail fin) and a red dorsal fin. The caudal (tail) fin, anal and pelvic fins are gray.

The black *schultzei* will make an interesting and eye-catching addition to any aquarium. Although

rare, a group of these beautiful corys is definitely a worthwhile addition to your fishroom. Enjoy them!



References:

www.fishkeeper.co.uk/help-and-advice/freshwater/catfish/black-cory

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Keepers of the Wild

Why Do We Keep Fish?

by Abigail Weinberg

Little multi-colored fish flit around in plastic bags displayed on a table in the Queens Botanical Garden basement. Some of the fish were raised in New York. Others were from Central America by way of Kentucky. All were for sale at tonight's fish auction, awaiting new homes in fish tanks across the city.

The fish swam in their bags while Rusty Wessel regaled about 60 tropical fish enthusiasts — mostly men, mostly graying — at the Greater City Aquarium Society's monthly meeting. Wessel is a celebrity of sorts, having built a second house for his 8,000 gallons of fish in Kentucky. Tonight he had flown to New York with his fish in Kordon Breathable bags, in which they can live for weeks, to share his secrets about livebearers, fish who carry their eggs in their



Rusty Wessel

bodies and give birth to live offspring. Some of the fish on the table were livebearers he had scooped from the wild during one of his four yearly collection trips to Central and South America.

Wessel told the audience how they could determine a fish's species by the shape of its dorsal fin, and about how overpopulation and overfishing have damaged South American fish populations. The group nodded, as if they understood a second language. When Wessel said that tilapia had been introduced to a pond of livebearers in Central America, the audience let out a collective groan, and someone yelled, "Oh, come on!" (Tilapia are often aggressive and can prey on smaller fishes like livebearers.)

For many fish keepers, like Wessel, what began as a hobby spiraled into a lifestyle. Data about the number of fish keepers is scarce, but the hobby dates to the 1850s, when the market for ornamental fish, tanks and books on the hobby began to flourish. Now hobbyists gather at local and regional meetings and conventions, competing for the rarest and most pristine specimens while attempting to preserve endangered species in the face of climate change and habitat destruction.

Fish are very different pets from cats or dogs or birds — and not just because they don't make noise. They are, by nature, undomesticated, and part of their allure is that they are samples of nature. This desire to replicate nature within a fish tank often leads a hobby to become a full-blown obsession, says Judith Hamera,

a professor of dance at Princeton and author of **Parlor Ponds: The Cultural Work of the American Home Aquarium, 1850–1970**.

"For some, the excess really comes from wanting to get as close to nature as possible," Hamera said. "Part of it is the desire to bring this wilderness scape into the home as virtuosically as possible, as naturalistically, as masterfully as possible."

Joe Ferdenzi, a formerly Queens-based fish keeper who now lives in Nassau County, says that he doesn't even think of his fish as pets. "I thought of them as just part of this little miniature world I was creating," he said. His miniature worlds now total more than 60 fish tanks in his basement.



Joseph Ferdenzi

Down in Kentucky, Wessel's fish house takes imitation of nature to an extreme. He started keeping fish as a nature-obsessed pre-teen in Kentucky, and by the time he was 10 he had about a dozen aquaria. His father eventually built him a fish room in their basement, and the number of tanks multiplied to about 20 or 25.

Now, Wessel keeps about 100 aquaria in his fully-automated fish house, separate from his own home. Wessel spent three years and \$100,000 building the house by hand. The fish tanks include a mechanism to change the water automatically. The many windows provide natural light, and the temperature fluctuations in the house resemble those of Central and South American biotopes. All Wessel needs to do is feed the fish once a day and clean the filters and glass periodically.

"I wanted it to basically mimic what the fish do in nature," Wessel said. "People tell me all the time, 'This is the best fish room ever.' I don't know that it is, but I know it works for me."

Most of the New York-based attendees at Wessel's presentation don't have the luxury of building separate houses for their fish, so they improvise, cramming fish tanks into the nooks and crannies of their apartments. Dan Radebaugh, Editor of the GCAS periodical, **Modern Aquarium**, keeps about 10 tanks and 800 gallons of water and fish in his Jackson Heights apartment: one in the living room, one in the dining room, two in the hallway and six in the office, plus a one-gallon tank containing a *Betta* fish.



Even in an apartment it's not hard for one tank to lead to another, and another. Radebaugh's wife Marsha explained the evolution, saying, "You get different fish that are not compatible. Or you breed them and you get another tank to grow out the fry (offspring). "You have a community tank and a specialized tank."



Dan and Marsha Radebaugh

While "My tai chi teacher might call it 'greed,'" Radebaugh said, the fish community might more likely call it MTS: multiple tank syndrome.

Most of Radebaugh's tanks contain three or four big fish, with pebbles for the fish to rearrange or not, white artificial lighting, rocks and driftwood, bubbling filters, and scenic paper backdrops taped to the backs of the tanks. There are catfish and Oscars and garfish, and a red bay snook. There are gouramis and discus. In another tank, rainbowfish and little plecos and shrimp. In another, a kuhli loach. In another, gold severums poke at green pebbles. Above them, African leaf fish and three silver dollars. Oh, and the plants: Java fern and Java moss and hair algae. Ask Radebaugh the fishes' Latin names, and he'll tell you.

This all may seem prohibitively time-consuming and costly, but hobbyists say it's worth it. Radebaugh said that his fish, mostly cichlids, tend to live long enough that the cost of collecting them is not overwhelming. He has had his favorite fish, a datnoid, for 14 years, having raised it from the size of a quarter to that of a dinner plate. And the prices of individual fish vary greatly, from a few dollars for common fish

— bettas, some goldfish, some killifish — to hundreds of dollars for rarer species.

For all his efforts, Wessel, who works in the family real estate and insurance business but has a degree in marine biology, spends only about 30 minutes a day interacting with the fish. Ferdenzi averages about an hour per day in the fish room. Radebaugh performs 80 percent water changes twice a week, which takes about an hour and a half to two hours and involves siphoning water from a fish tank to the drain with a hose. (New York water is great for fish, he said.) Even when he was working in the medical publishing business, he says that it wasn't hard to find the time to take care of the fish.

"It's not something that I look upon as a chore," he said. "It's just part of the deal. You gotta keep 'em healthy."

Besides, they're friends with whom he shares an emotional bond. Fish keepers are often of the mind that fish are smarter than most people give them credit for. Radebaugh said that his fish are aware of his movements throughout the apartment. He once separated a mating pair of cichlids using a divider with a small hole so the female could escape if the male became aggressive — standard practice among cichlid breeders. Each time Radebaugh left the room, the male nevertheless somehow escaped to the female's side of the divider. No matter how many times Radebaugh replaced the male, he always sneaked to the other side when Radebaugh left the room. Radebaugh eventually had to set up a series of mirrors to find out how the fish was escaping. The fish knew that he was misbehaving. "He didn't want us to know how he was doing it," Radebaugh said.

Radebaugh thinks that this form of human-animal relationship may be one of the reasons why the hobby is so male-dominated. "Perhaps it could be a socially O.K. way for men to be nurturing and still keep enough masculine stuff, like going out

and catching the damn things and working with the equipment,” he said.



Judith Hamera

Hamera thinks the reason the hobby is mostly men is that it began in a time when men were more likely to be able to travel to faraway lands than were women. Another factor, she said, is that men often deliberately exclude women in order to preserve their “culture of male geekdom.” “There’s

this sense of men using this historically to carve out a space free from domestic responsibilities — that is, from the home — and creating a male space of leisure and comfort that sexism would believe might be jeopardized by inclusion,” she said.

Whatever the causes, the boys’ club mentality is so prevalent in the fish hobby that the American Cichlid Association has a women’s division called Babes in the Cichlid Hobby — BitCHes, for short.

Not only is the hobby mostly male; it is also highly competitive, with collectors vying for the most exquisite specimens. “One of the drivers behind excess is competition,” Hamera said. “Can you get a rare species? Can you get a more rare species than someone else? Can you have a larger setup?”

This competition manifests in several ways. There are national fish conventions in which keepers from across the country bring their rare fish to swim before judges. The fish community is not as organized as, say, the National Audubon Society. It is instead divided into a series of clubs based on region and type of fish.

There are various organizations, both regional (such as The Northeast Council of Aquarium Societies — one of the organizational councils under which many local clubs, including GCAS, operate) — hold yearly meetings that feature expert speakers, bowl shows, breeder awards, club publication awards, auctions, and so forth.

There are also organizations devoted to certain *types* of fish. The American Cichlid Association holds a yearly cichlid competition where entries are divided into four classes: North and Central America; South America; African Rift Lake and African Non-Rift Lake, Madagascar and Asia. There are fish tanks available at the venue, and competitors haul their fish to the show in the backs of their cars.

“The number one question I’m always asked when I tell people about the fish shows is, ‘Really, how do you bring fish to the show?’” Ferdenzi said. “Ever hear of bags and buckets?”

It’s a lot easier for fish to survive in bags and buckets than you’d think. Wessel said that the earliest means of transporting fish was via metal buckets. Now,

breathable plastic bags allow carbon dioxide to escape and oxygen to enter the water, so fish don’t suffocate. Fish that are flown in from overseas can survive in breathable bags inside Styrofoam containers. For a few hours en route to a fish show, fish do just fine in the old-fashioned plastic buckets that can be bought at Home Depot.

Wessel, who has judged at the Northeast Council fish show, said that the fish are graded based on color, size, condition, finnage and deportment. Each category is worth 20 points, and the total score is calculated out of 100. The fish should be brightly colored, fully grown, intact (no missing scales or damaged fins) and lively — they should react if you put your finger against the glass.

And that’s just for cichlids. There’s the American Killifish Association for collectors of those small, brightly colored fish. There are also the “fraggers,” who collect coral. And oddly enough, landlocked Ohio is to fish keepers what L.A. is to actors. The state is home to a vibrant community of fish clubs, from the Greater Akron Aquarium Society to the Columbus Area Fish Enthusiasts to the Ohio Cichlid Association. A yearly show, the Ohio Cichlid Extravaganza is one of the biggest in the community, allowing for more than 150 entries and garnering visitors who make the trek from the east coast.



Above: Scene from an NEC convention a couple of years ago. Below: Some of the children at the convention holding their own meeting. Photos by Jules Birnbaum



The competition exists at the micro level too. The GCAS meetings, as well as many other small-scale fish clubs, feature bowl shows in which a judge rules

on the quality of fish that members have brought in bags. Radebaugh generally doesn't compete, though. "I have a few times, but with the larger fish it's an awful lot of trouble to pack those guys up and move them, and there's always a chance that something will go wrong."

Fish shows, according to Ferdenzi, are "becoming sort of an anachronism" — they're not worth the work it takes to organize them. For Ferdenzi, who served as the president of GCAS for 19 years and who has an almost encyclopedic knowledge of the history of the fish hobby in New York, the allure of competing wore off over time. "My fish room is festooned with trophies and plaques that I won at those events," he said. "After a while there's only so many plaques and awards. You just say to yourself, 'Been there, done that many times.'"

Even fish clubs, the bread and butter of organized fish keeping, are taking a hit in the internet era. Roughly 70 to 90 people attend GCAS's monthly meetings, and another 90 to 100 people attend the Brooklyn Aquarium Society's monthly meetings at the New York Aquarium in Coney Island, but these are the last two remaining general fish clubs of what was once a vibrant fish scene in the city.

Ferdenzi said that the aquarium hobby was so popular in the 1930s that thousands of people came to see a neon tetra (today a common fish) displayed at a GCAS show. "It was such a novelty that a story about it ran in the New York Times," he said with a laugh.

But today's fish hobbyists have one thing that yesterday's hobbyists lacked: an intimate understanding of the environmental factors that threaten many aquarium fish (and others) with extinction in the wild.

Many who took up the hobby as a leisure activity have become unexpected environmentalists. Wessel, for example, has seen firsthand the effects of climate change on fish communities.

"When I first started going (to Central America), when you put a net in the water, you came up with a lot of fish. There were so many fish, and not so many people. Today when you go there, there are so many people, but so few fish," he said. He attributes the declining fish populations to pollution, overfishing and destruction of habitats. What's more, he said, with weather extremes, the water in these regions has become completely unpredictable: now it may pour during the height of the dry season.

As fish species' native habitats are threatened, fish keeping is one way to ensure that the species survive. In 2004 Claudia Dickinson, a GCAS member, founded a program that encourages fish keepers to keep at-risk species, "offering that species a future of hope." The program, CARES — Conservation, Awareness, Recognition and Responsibility, Encouragement and Education, and Support and Sharing — unites amateur fish keepers with professional ichthyologists (fish

zoologists) to determine which species are most at risk.

Ferdenzi, a CARES member, tries to keep fish that are endangered in the wild. "I have a cichlid from a crater lake in West Africa, and this is the only place in the entire world where this fish is found," he said. "If something were to happen to that biotope, the species would be extinct in the wild."

Hamera believes that fish keepers will begin to see themselves as saviors of dying species. "I think one of the things you can expect to see is the aquarium functioning as a kind of new utopia, as kind of a time capsule so that captive fish-breeding and coral fragging become like little arks — little lifeboats for species," she said.

Radebaugh keeps a tank of highly endangered Mexican livebearers that he shares with other fish keepers, but he doesn't see keeping endangered fish as pets as the long-term solution. "What we need to do long-term is to be sure that they can survive in some kind of natural way," he said. "The more we can do to keep the earth and the water able to sustain varied life, the better our lives will also be."

Wessel advocates for re-introducing endangered species back into the natural habitats — a process that has already occurred in some areas, such as Lake Malawi.

"Number one is to preserve them, to get them established by aquarists or farms or aquariums," he said. "But the number two, long-range goal, of course, is for them to be re-introduced at some point."



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Photos of Dan & Marsha Radebaugh and Joseph Ferdenzi by Joseph Gurrado.

Editor's Note: Abigail is a daughter of Judith Weinberg, who spoke at one of our GCAS meetings a few years back. This article was originally written as a journalism project.

Caribbean Dreaming

Story and Photos by Stephen Sica



Another year and there's hope and/or no hope in sight. Pick one. Last year I told Donna that we would see everyone in two years. She thought that I was joking. Now I'm wondering if my estimate was conservative. I think we're at the point where you get your shots and just go out there!

For the record, we received the Moderna vaccine on February 7 and March 7. Thank goodness that 2021 isn't a leap year, so we can easily remember the dates. I always liked short months when I was working.

We decided to begin a road trip to Florida on May 1st to visit Donna's sister and nephew, since the airlines no longer accept emotional support dogs who weigh more than twenty pounds including the weight of the carrier. Dogs who make the weight must be put in a carrier and placed under the seat in front of yours. Oh, and you must pay a \$125 fee each way. Unfortunately, Cordelia, who is a seasoned flyer, weighs a lean twenty-five pounds. She doesn't make the weight. Besides, she is too long to haul around airports in a carrier.

We had intended to go diving in Key Largo, but the timing didn't work out. Also, for your information in case you wish to go to Key Largo, the rate for hotel rooms for a Friday and Saturday evening is between \$369 to \$429 plus taxes for a plain room—and some of them are *really* small and plain. Then we considered a "practice dive" in the Living Seas of Epcot Center

in Orlando, but diving in the Living Seas has been temporarily suspended due to the coronavirus. We all know that Disney doesn't need our \$179 per person, so we decided to skip Key Largo and stop in Myrtle Beach, SC, a place we have never been, and visit friends who had recently retired in New Jersey and moved to Port Orange, FL, just south of Daytona.

I must admit that for the prior few weeks, especially during our snowy winter, I had been gazing at old photos that I have stored in the Microsoft cloud. We also recently hired a contractor to begin a project when we return from Florida. He told us that he emigrated from Saint Lucia and asked if we have ever been there. Donna replied, "Four times—two by air and two by cruise ship."

It made me wonder if I would ever return to the island for a fifth time. It also made me think about my Saint Lucia experiences. We never had a bad dive in Saint Lucia, and the underwater sights were exceptional. I'm sure I included a few photos in an article or two that I wrote many years ago in **Modern Aquarium**. In any event, I'm in the mood to think about the "good old days," so I decided to send a few to Dan in case he needs something to fill a few pages in the next edition of our GCAS publication. Right now I'm going to rest and try to meditate and think about the "good future days!"

continues →



A Grand Cayman divemaster demonstrates how the locals have tamed one of several Nassau groupers who live on a shallow reef near the island's north coast.



A school of bar jacks survey a shallow Caribbean reef. We visited six islands during a one week cruise and dove five of them. It was an enjoyable yet tiring experience.



The lionfish, a South Pacific native, is now commonly found throughout Florida and the Caribbean. Lionfish roundups with prizes are a common occurrence. Some restaurants sell these fish as a delicacy. Prices are usually high.



A bright yellow trumpetfish makes a prominent statement against dead coral. Blue and yellow trumpetfish are less common when compared to the usual brown and beige coloration. One would think that these two primary colors would make green, but I have never seen a green trumpetfish.



A shark wrangler in Grand Bahamas Island has to fend off hungry Caribbean reef sharks while entertaining a group of "tourist divers" who are eager to interact with these animals. I just took photos and counted my fingers!



The needle-like teeth of this purplemouth moray eel were too far from my camera to offer a threat. Mouth breathers, such as moray eels, give a menacing but harmless appearance. Unless you happen to be bitten!



Where else but Key West would you find an unidentifiable fish? It's probably in a young or intermediate phase that a diver rarely sees. I suspect that dedicated research will provide its true identity.



A snake eel in Granada seeks out a mound of soft sand to burrow and escape both inquisitive divers and photographers.



I enjoy my home aquarium, but you'll never meet up with a Caribbean reef squid in your living room.



Schools of grunts are indicative of a shallow reef dive in the Florida Keys.



Notice the rare and unique trailing dorsal fin on this Little Cayman island French angelfish. I took this photo in 2009. Will this kind of sea life still exist post-pandemic?



Donna swims above an unknown type of lettuce-leaf coral in her search for new and beautiful forms of sea life.



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!*



Feeding Fish Bloodworms

(Chironomidae/Chironomus)

Possible Health Risks to Hobbyists

by Thomas M. Keevin

In a time, long, long ago in the pre-COVID-19 world when we actually had MASI meetings, a question was raised at one of those meeting by Pat Tosie. “*Had anyone had an allergic reaction as a result of feeding their fish bloodworms?*”

I was surprised by the number of hands that immediately shot up in response. So the question and the overwhelming positive response prompted me do a quick literature review. I was curious if bloodworms could possibly be a health hazard to aquarium hobbyists.

I first scanned some aquarium hobbyist blogs to see what folks had to say. Here are some posts from MonsterFishKeepers.com that will help you gauge the potential severity of an allergic reaction to bloodworms. Note that in the first description, the hobbyist was apparently even allergic to aquarium water in which the fish had been fed bloodworms. This has health implications for you even if you are not feeding your fish bloodworms.

“I fed them for years and developed a very bad allergy. I started having severe reactions; took me three of them to realize it was the bloodworms. My eyes swell completely shut, I break out all over in red splotches and can’t breathe. It feels like my chest is caving in. I now carry around an Epipen and an inhaler. I tried just letting my husband feed them, but that didn’t work out either. I can’t clean our aquarium if they’ve been fed at all—my hand and arm breaks all out in welts. Also, if my husband gets near me without having washed his hands after feeding, I start to react.”

The reactions increased in severity. The first reaction was bad, but the third just plain terrified me. I’ve always had very bad allergies, but I’ve never experienced anything as scary as my reactions to these things. On the third reaction it took 3 days for the swelling to go away in my eyes. They were swollen basically completely shut for 24 hours, even after steroid injections. If you do react and experience



swelling in your eyes, whatever you do, DON’T touch your eyes! It will make it a lot worse.”

Another hobbyist described a very similar response to bloodworms in their post. “I can’t feed them at all, which sucks because fish love them and they offer great nutritional value. Even if I wear gloves and only

use utensils to feed, my face swells, airways constrict, and I get a wonderful red itchy rash which lasts for a couple of days. I fed them for years without issues until one day I found myself in a rather unattractive mess requiring an Epipen and some heavy doses of Benadryl for a few days. I have tried it a few times since, and even in their frozen state, with gloves, I have a reaction.”

To my surprise, a number of the bloggers commented that the they had just discovered that they too had an allergy to bloodworms based on the descriptions of allergic reactions provided by their fellow hobbyists. The posts had solved the mysterious symptoms they were having. For example: “Just figured out I am allergic to BW. What happens is my eyes start to get a burning itch and worsen if I scratch. Back of my hands get itchy. Just pinned it to it only happening right after I feed fish BW’s!!! Sure enough, its all over the net.”

After reviewing what the bloggers had to say, I conducted a search of the scientific/medical literature and found that there was a considerable body of research that both supports and parrots the descriptions of allergic reactions provided by the bloggers. There are so many scientific papers and clinical case reports that I could write a lengthy scientific review paper on the topic, and by the way, allergic reactions are not restricted to hobbyists. They have also been reported in fishermen who use chironomids for bait, in people who work in aquaculture, people who work in public aquariums, people who produce, package, or sell fish food, and people who live in areas with high concentrations of flies. For hobbyists, allergic reactions can be caused by exposure to live, frozen, freeze-dried and processed fish foods that contain bloodworms as well as other chironomids.

The medical literature suggests that allergic reactions to chironomids (bloodworms) can present themselves as conjunctivitis—inflammation or infection of the transparent membrane (conjunctiva)

Reprinted from the July/August 2020 issue (Volume 46, # 4) of **The Darter**, published by The Missouri Aquarium Society

Types of allergic reactions to Chironomids:

Conjunctivitis
Angioedema
Rhinitis
Hives
Localized rash
Asthma
Anaphylaxis!

that lines your eyelid and covers the white part of your eyeball), angioedema (area of swelling of the lower layer of skin and tissue just under the skin or mucous membranes), rhinitis (inflammation of the inner lining of the nose), contact urticaria (hives), contact dermatitis (localized rash or irritation of the skin caused by contact with a foreign substance), asthma (condition in which your airways narrow and swell and may produce extra mucus), and anaphylaxis, which causes your immune system to release a flood of chemicals that can cause you to go into shock. Your blood pressure drops suddenly and your airways narrow, blocking breathing. Signs and symptoms include a rapid, weak pulse, a skin rash, as well as nausea and vomiting. Anaphylaxis requires an injection of epinephrine and a follow-up trip to an emergency room.

Approximately 20% of people exposed to blood worms have some level of allergic reactions. The allergen has been identified as chironomid hemoglobin (Chi t I). As you probably know, hemoglobin is an iron-containing protein that carries oxygen. It is responsible for the red color of human blood cells and of bloodworms. Different organisms have different molecular hemoglobin structures; hence bloodworm hemoglobin, which is different from human hemoglobin, can be an allergen to humans. Adults (flies) can also cause allergic reactions in humans (although aquarists are not usually exposed to adult flies), but the allergen is apparently tropomyosin.

The description of allergic reactions in the medical case study literature is very similar to what we saw in the fish hobbyists' blogs.

"A person who worked in an office setting in our hospital was referred to me after three admissions to our emergency department for marked angioedema and inflammation of the right side of the face, chemosis of the right eye, and blurred vision with onset in the morning at work. She had no atopic history and had eaten no food on the day of one of the reactions. Only after persistent questioning regarding what she may have transferred from her hand to her face (she was right-handed) did she divulge that she fed the fish in her aquarium in the office. She did not know the source of the fish food, and I requested that she place a tiny amount on her forearm the following day. This produced a swelling of the entire forearm. The fish food was freeze-dried bloodworms." (From Schellenberg 2005). Schellenberg (2005) also describes an incident of accidental ingestion of bloodworms. "..... Dr. J. Roberts presented the case of a girl who had developed anaphylaxis after accidental ingestion of residual fish

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food that was on her hands when she was eating dinner. This individual had a striking reaction to a dilute preparation of the bloodworm fish food on skin testing and did not react to other fish food preparations."

A simple skin-prick test with a dilute solution of bloodworms can be used to determine if you have an allergy to chironomids. However, be careful! A medical publication (Nguyen et al. 2007), by a group of allergists, was prepared to inform the medical community that the skin-prick tests for bloodworm allergies could actually cause severe allergic reactions, including anaphylaxis. The paper described three severe allergic reactions and made the following recommendations: "Performance of skin-prick test with *Chironomus* should be done with extreme caution. Undiluted red grubs should be avoided. Prick tests

have to be started with a highly diluted solution and progressively increased to obtain the lowest effective concentration. ... In conclusion we report three cases of patients who developed adverse systemic reactions to skin prick testing with red grubs. *Chironomus* larvae have proven to be a potent allergen. As demonstrated, skin testing with red grubs can result in severe reactions and should therefore be performed only in controlled hospitalized settings."

I think this has answered Pat Tosie's question: "*Had anyone had an allergic reaction as a result of feeding their fish bloodworms?*"

Approximately 20% of people who have contact with bloodworms (mostly fish hobbyists) develop allergies to them, which can be severe in some people. This number corresponds well to the number of hands that were raised when Pat asked his question.

A runny nose, sneezing, coughing, hives, itching skin, and swollen eyes can all be a considerable inconvenience, but asthma or anaphylaxis can be fatal

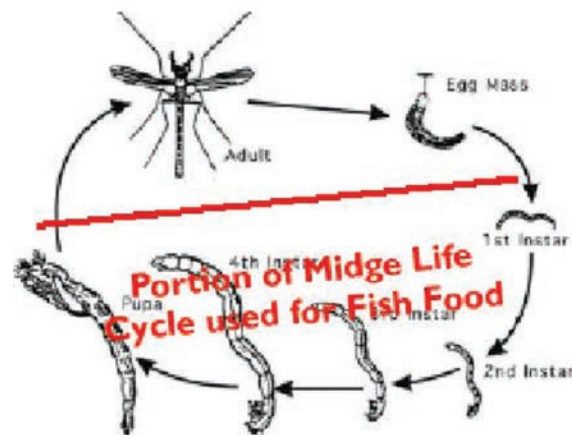


Figure 1. Chironomid life cycle (adapted from Waller 1987).

BloodWorms

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if not quickly treated. So, it was worth my time sitting down and doing a short literature review if you now know why your hands itch after feeding your fish or if I have potentially saved somebody's life. The one thing I couldn't understand while reading the hobbyists' blogs was why they continued to feed their fish bloodworms when they actually had associated the fish food with their symptoms.

A doctor's recommendation in one of the case studies was simple. Stop feeding your fish bloodworms and feed them something else! Remember, the more you expose yourself to bloodworms the greater the chance that you will eventually have a severe allergic reaction.



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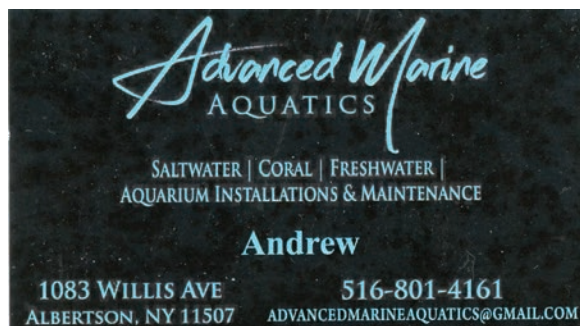
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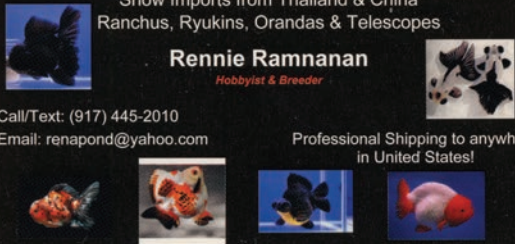
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Tonight's Speaker

Joe Graffagnino: A Pond Grew In Brooklyn

Joe has been a freshwater fish hobbyist for over 48 years. He enjoys breeding all species of tropical fish and sharing them with fellow hobbyists. Joe has written extensively on breeding and raising fish, and has been published in various magazines such as **Tropical Fish Hobbyist**, **Aquarium Fish** and **Freshwater and Marine Aquarium** (FAMA). Joe has also been published in the American Cichlid Association publication **Buntbarsche Bulletin** and in many local aquarium society publications throughout the United States and England. He also enjoys fish photography.

Joe lives in Brooklyn, NY with his wife, and currently maintains 38 aquariums of various sizes, containing killifish, anabantoids, characins, cyprinids, livebearers, cichlids, and catfish both Old and New World. He also has an outdoor pond containing koi and goldfish. Joe joined the Brooklyn Aquarium Society in 1974, and is a former President of that organization. Prior to holding that position Joe was the society's Corresponding Secretary. He is also a member of and current Breeder Award Chairperson for the Greater City Aquarium Society.



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In spite of popular demand to the contrary, this humor and information column continues. As usual, it does NOT necessarily represent the opinions of the Editor, or of the Greater City Aquarium Society.

A series by the Undergravel Reporter

According to ABCNEWS.com¹, "As of April 7, 15 states have legalized recreational and medical marijuana through voter ballot initiatives or state bills. The New Mexico and Virginia state legislatures passed bills this session that would repeal their respective prohibitions on cannabis and are awaiting signatures from their governors."

Humans like to believe that WE are the most intelligent species. And, while "getting high" is not (in my opinion) necessarily an indication of intelligence, it is noteworthy that dolphins, who are often credited with being most intelligent species in the animal (i.e., non-human) kingdom, have apparently beat us to the punch.

During filming of a documentary², young dolphins were seen carefully manipulating a certain kind of puffer fish which, if provoked, releases a nerve toxin.

Though large doses of the toxin can be deadly, in small amounts it is known to produce a narcotic effect, and the dolphins appeared to have worked out how to make the fish release just the right amount.

Carefully chewing on the puffer and passing it between one another, the marine mammals then enter what seems to be a trance-like state. The behavior was captured on camera by the makers of *Dolphins: Spy in the Pod*, a series produced for BBC One by the award-winning wildlife documentary producer John Downer.

Rob Pilley, a zoologist who also worked as a producer on the series, told the Sunday Times: "This was a case of young dolphins purposely experimenting with something we know to be intoxicating."

"After chewing the puffer gently and passing it round, they began acting most peculiarly, hanging around with their noses at the surface as if fascinated by their own reflection."

"It reminded us of that craze a few years ago when people started licking toads to get a buzz, especially the way they hung there in a daze afterwards. It was the most extraordinary thing to see."

The documentary makers used spy cameras hidden in fake turtles, fish and squid to film 900 hours of footage showing dolphins in their



Footage captured for the BBC One documentary Dolphins: Spy in the Pod showed the marine mammals chewing on puffer fish in order to get 'high' (YouTube/BBC)

natural habitats.

"I get by with a little help from my friends" -- "With A Little Help From My Friends" -- the Beatles



References:

¹<https://abcnews.go.com/US/legal-marijuana-movement-builds-states-change-laws/story?id=76907902>

² <https://www.independent.co.uk/climate-change/news/dolphins-deliberately-get-high-on-puffer-fish-nerve-toxins-by-carefully-chewing-and-passing-them-around-9030126.html>



Fin Fun



IN MY FISHROOM

Hidden below are items I have in my fishroom, and that you probably have in your fishroom as well. See if you can find them all.



AIRLINE
AIRSTONE
BUCKET
DRIFTWOOD
FILTER

FILTERFLOSS
GRAVEL
HEATER
LIGHTSTRIP
NET

SPONGEFILTER
SYPHON
TANK
TESTKIT

Solution to our last puzzle: LOOK & SEE

Center ceiling light missing
Wires on and under table missing
Water bottles on table missing
Joe Ferdenzi's tie is shorter
Joe Ferdenzi's tie has a tiebar
Jason Kerner (behind Joe) missing
The plaque Joe is holding is blank
Horst Gerber's shirt is missing all buttons
Horst Gerber's tee shirt is missing
Joe Ferdenzi's hair covers his ear

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



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

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

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

In 2021 make up for staying at home in 2020!

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

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



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



Within easy driving distance for most and good flight connections for everyone.

