

# ***In Depth***

March 2016

**Special Marine Event** featuring  
Justin Credabel, March 12th

**Raising Royal Farlowellas**

**DIY LED Lights**

*and so much more!*



# In Depth

published by The Tropical Fish Club of Burlington

Established February 1989



We meet on the second Thursday of each month, September through June, at 6:30 PM at the VFW Hall, 73 Pearl St, Essex Junction, VT.

Our membership consists of adults, children and teens. Many members are very experienced and have been keeping fish for years, and others are just getting started. People of all ages and experience levels are always welcome. Meet and learn from those who share your interests!

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## From the President

by David L Banks, Jr

I think our 26<sup>th</sup> year has been as good, if not better than our 25<sup>th</sup> and the momentum seems to be pushing us even further along into our 27<sup>th</sup> year! We had a number of very good meetings this past year, had great club participation at the 2015 NEC Convention in Connecticut last April, and at several national level conventions, too! Our July picnic gave us a chance to relax and converse and see Ira's new fishroom! What more could we ask for? Well, there is always room for new activities, so let's see what we are planning.

Our March meeting will have us going deeper into the marine side of our hobby as we sponsor a frag swap and host Justin Credabel here in Burlington! Justin will present a program we are calling "Marine and Reef Hot Topics" where he will take several topics and spend 10 or so minutes going over each. Justin's bio is very impressive, and he is a great speaker and just a nice guy. I hope everyone is planning to attend this special Saturday meeting March 12th at 1PM at the Holiday Inn on Williston Rd, South Burlington, VT. (Note we are not meeting the second Thursday this month). Even if you don't keep marine aquariums, or don't even think you are interested, it will be worth your time to come and participate! We will have our usual door prizes, raffle and an auction, plus a Q & A and social time with Justin.

The NEC will be celebrating their 60<sup>th</sup> anniversary this year, so the convention being held April 8-10 in Rocky Hill, CT, will be a special one. I hope everyone has planned to attend again this year. From the speaker lineup, the guppy and cichlid shows, the vendor room, individual room sales, the all-day Sunday Auction, the almost all night hospitality suite (hosted by Fluval this year) to everything else that goes on, it's a weekend we look forward to each year. TFCB has always had great attendance at the conventions, and I don't expect this year to be any different!

Our spring line up of speakers is set. April will see the return of Steve Edie from St Louis. Steve is a regular attendee of the NEC convention and, since our meeting is the following week, he agreed to stay in the Northeast for an additional week. He will also speak at the Montreal and OVAS club meetings. As Steve put it, his talks are a combination of information and humor.

In May, our own Ann Whitman will speak on water gardening and keeping and breeding fish outdoors in tubs. Of course, with our "normal" cold-weather climate and short season, May is the perfect time to start if you want to try it this year.

Our June speaker will be Carolyn Estes from Austin, Texas. Carolyn has been a staple at the American Cichlid Association conventions for a long time and you can read about her activities in the "Babes in The Cichlid Hobby." She owned a fish-only pet store in Austin for almost 20 years, and she can talk on a variety of topics. She will present a program on what fish can be kept in what size tank, and while this is geared towards beginners, I think it is always a great topic for all levels of hobbyists!

We are still planning our fall schedule, including our Annual Auction date, so watch our Yahoo email list, Facebook page and the website for details.

Thanks and hope to see you all at the meetings!

David



## Editorial

By Ann Whitman

One of the most rewarding aspects of our hobby for me is talking with and listening to others who share my interests. We all have experiences to share, questions to ask and more to learn. That's why I joined TFCB and attend as many shows, conventions, auctions and club events as I can.

Monthly club meetings are time to get caught up with friends and spend a couple of hours dedicated to fish talk. That's where I find out who's breeding what, whether someone is selling equipment and what's happening in the local stores and personal fish rooms. The raffles and auctions are great places to get something free or new, too.

I also attend at least one or two conferences a year. I regularly attend [NEC](#), and have been to the [Catfish Con](#), [ACA](#), [Aquatic Experience](#) and smaller events throughout New England. Meeting, and getting to know, the leaders of the tropical fish world in person is a thrill. These are people who make a difference by discovering, researching and breeding rare and endangered fish, advocating for fish and their habitats, raising money and awareness about the plight of threatened species. They travel to faraway places and bring their experiences to local clubs and conferences, magazines and newsletters. They experiment and innovate and bring new products and practices to the hobby that make our fish and plants healthier and more comfortable. At conferences and club events, it's possible to talk with these folks, one-on-one, and make lasting connections.

Club meetings, auctions and conferences are also my time to re-energize and get excited about my hobby. These are places where we find new fish and plants and live foods that local stores don't sell. We swap ideas and tips on breeding, aquascaping and best practices. We share our experiences with products, fish, fish sellers and equipment. We learn about what's going on in the world beyond our own fish room and club. We support those who are new enthusiasts, and those who could use a hand to get through challenging times. We teach and learn from each other.

Join the club!

Ann



## Speaker of the Month

[Justin Credabel](#) is a coral and reef lover and lifelong aquarium hobbyist. Justin co-founded [ReefGen](#) to bring his love of coral to a wider audience with wholesale, captive-grown coral and fish. A particular passion for *Goniopora*, also known as flowerpot corals, led him to develop the food *Goniopower*, manufactured by [Two Little Fishies](#).

On Saturday, March 12<sup>th</sup>, Justin will present six "Marine and Reef Hot Topics" in an entertaining, action-packed discussion! He says, "Together, we will explore *Thraustochytrids* (the unsung Symbiont hero), Hydrogen Peroxide and Algae control, Grafting and Fusion, Potassium Dosing, Unusual Coral Propagation and whatever hot topic I'm jazzed about at the moment." There will be time to meet Justin, socialize and ask questions.

Justin has spent the last decade writing for the reef hobby, giving presentations around America and beyond, and further pushing the boundaries of coral reef knowledge and practice. Justin is also an artist and musician and lives on Long Island with his wife and daughters.

### Special Event

The special Marine and Reef Aquarium Day event takes place on Saturday March 12<sup>th</sup>, starting at 1PM, at the Holiday Inn on Williston Rd, South Burlington, VT. There will be a silent auction Frag Swap where hobbyists can share and sell frags of corals and other marine life. Other freshwater and marine-related items will be available during the Live Auction, and everyone has the chance to win a nice selection of door prizes.

Free admission, free door prizes, no charge to sell/trade frags! Whether or not you have a reef or marine tank, plan to attend as there will be something of interest for everyone. Justin is an extremely knowledgeable, entertaining and dynamic speaker.

Contact David or Janine Banks at [dbanks@together.net](mailto:dbanks@together.net), 802-372-8716 or Ira Gardner-Morse at [ira.gardner.morse@gmail.com](mailto:ira.gardner.morse@gmail.com) for additional information. If you are planning to bring in frags, please confirm with Ira or David to ensure there is space available.



Coral frags. photo by David Banks

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## Club Meetings and Events

by Ann Whitman

Ira Gardner-Morse led a well-attended workshop for our January meeting. More than 30 people showed up to make their own LED aquarium covers. We had lots of fun and camaraderie as we helped each other make the electrical connections and push spline into the screen frame to seal our lights. See the instructions for this project on [page 17](#).

In February, three club members shared their DIY projects for the fish room. **Andrew Bessy** showed us his brine shrimp hatchery design, **Richard Weinberg** made a killifish spawning mop and showed his glass tops that open on the end instead of the front. **Dave Isham** demonstrated how to construct a bubbler filter from empty whiskey bottles. Look for the **DIY Tips, Tricks and Treats** column in the coming months of *In Depth* for instructions for all of these projects.



Ira explains the power pack and connection parts to Joan.



Andrew Bessy uses a cardboard carpet core as a holder for his soda-bottle brine shrimp hatchery.



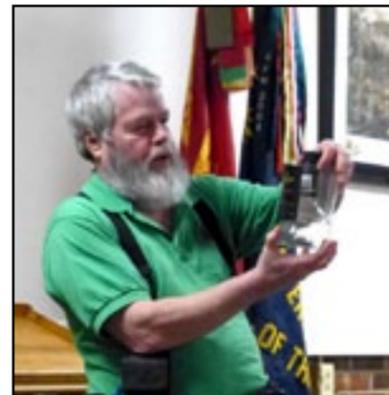
Dave Isham shows Olivia how to attach the LED strip to a connector.



Oliver tests his connections before sticking the LED strips to the plastic.



Richard Weinberg made a floating spawning mop for killies.



Dave Isham shows how to make filters from empty whiskey bottles.



Richard's glass tops open on the end for tanks set side-to-side.

## Tale of Too Many Tanks

By Brian Candib

Deciding to downsize the fish room is not an easy task. I went from a couple of tanks up to 22 tanks within the last 10 years. Like many hobbyists when they first start attending auctions and monthly meetings, I would see fish that I liked and purchase them. I really did not know a lot about the fish. My reasoning was to install another tank for them and/or mix them as best I could with other tanks. Basically, I knew if they were cichlids to be very careful about mixing them with other cichlids, and sometimes even two males is one too many.

**“It was mostly the little things I did wrong.”**

Then there were the times I would be asked to take others' fish that they could no longer house, for one reason or another and I would agree right off, fill up another tank and do my best to settle them in. I think most experienced aquarists know this is not the most economical way to run a hobby, but we do it anyway. Knowing of what you are acquiring and learning about its proper care before you get it home are of the utmost importance, of course, but it doesn't always work out that way.

It was mostly the little things that I did wrong. I acquired some Corydoras catfish and, for a number of years, I let them forage around in a 20-gallon community tank with a gravel bottom. Then, one day this past winter, I read the *Amazonas* magazine article about this fish and learned that its natural habitat is a sandy bottom. On rougher substrate they run the risk of bruised and broken facial tentacles. Well, after a quick look, I realized mine had succumbed to this and I really was not doing them justice.

Another time, I purchased some angelfish from a club member and placed them in a tank with swordtails and mollies. I had mistakenly thought these were all peaceful fish and would coexist nicely. Well within a month, it was pointed out to me by that same club member that the fins of the angels were missing and my swordtails were the fin nippers. (By the way, the best-rated “Internet” answer was they were compatible as long as the tank was 50 gallons or bigger and there were six or so swords—really? But I digress.)

*continued on next page*



**Brian Candib** is the Vice President of the Tropical Fish Club of Burlington. He has been keeping freshwater fish for roughly 10 years now. He enjoys his basement fishroom full of a wide variety of species

and tanks with his wife, Tami, dog and cat (Maggie and Jasper).

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What I am really speaking to is being more disciplined about fish-keeping. My tanks were just a cornucopia of fish that were living together as best I could derive. Mostly out of this born out of my laziness to correct a situation or do adequate research to provide the hospitable environment needed.

So for 2016, I'm on a mission to improve the environment for my pets. I've been spending more time on knowing the fish and how to make a more optimal habitat for them. I am in the process of reducing the number of tanks I am keeping and focusing more on fish that matter rather than just fish of variety. I have removed seven tanks from my inventory and, in the process, combined some of those fish into other tanks.



As one could easily guess, I solved some maintenance issues by redistributing my plecocs. I had one 20 Gallon tank with a six inch pleco. That went rather nicely into a 50 Gallon tank of convicts I have raised forever. I was constantly scraping the tank down and the hiding spots within always looked a mess. Within a few days of the Pleco, that tank has never looked better and I am able to spend less time on it than I have to. I then removed a lot of my smaller Plecos from a 10 Gallon tank and disperse them throughout the room. This way I have a better chance

of keeping them all happy, allowing more of the fry to survive and preventing the limited habitat from starving each other out.

I am able to easily combine some of my killifish into one tank and also my single loach in with my guppies. I am treading very cautiously with my cichlids and did move one single male in with my 20G petrocola tank for now but probably will need to research that a little more.

I have a little ways to go. I'd like to get down to around 10 tanks and then keep fish that really matter rather than varieties of fish. I am starting to look for endangered fish in the wild as more of my calling. I believe as an aquarist we all need to present a positive and responsible aspect to fish keeping. I am hoping that by doing this I am serving the higher purpose of fish keeping and with luck, as technology advances, some of those fish may be able to assist with reintroduction back into the wild.



- Crossword Answers, from page 22
- |                   |                 |
|-------------------|-----------------|
| A2. CHOLLA        | A29. CONVICT    |
| A3. CARES         | A30. CAVEFISH   |
| A4. CORAL         | D1. PANAMA      |
| A8. JAGUAR        | D2. CENOTE      |
| A10. MANGROVES    | D5. PACIFIC     |
| A11. GUPPY        | D6. LAGUNA      |
| A12. JACKDEMPSEY  | D7. CRYPTOHEROS |
| A13. MAYA         | D9. ANABLEPS    |
| A16. COSTARICA    | D14. BIOTOPE    |
| A17. BELIZE       | D15. RIO        |
| A18. GAR          | D19. RAINY      |
| A20. MOSQUITO     | D21. SWORDTAIL  |
| A24. SAILFINMOLLY | D22. YUCATAN    |
| A25. BANANA       | D23. FIREMOUTH  |
| A27. WATERLILY    | D25. BAT        |
| A28. DARTFROG     | D26. EIGHT      |

## American Cichlid Association Convention 2015

By David L Banks, Jr

Janine and I have attended a few ACA conventions over the years (Chicago 1990 and 1997, Cleveland 2000, NJ 2001), so when we found out the ACA Convention 2015 was going to be in New England for the first time, we made plans to attend. We typically do not like going away in the summer, but this was so close, how could we not go!

TFCB had a good representation at the convention too; Ann Whitman, Joan Snider, David Isham, Ira Gardner-Morse and his friend, Kristie. Doug and Julie Patac and Genevieve Lacasseverret also attended the convention.

This convention was an opportunity to see many friends that we have made over the years and many that we had not seen in years. Mike Schadle lives in Indiana and he is one that we had not seen often in the past several years. He was driving to Springfield, so we invited him to come to our house for a few days prior to the convention. We hung out and relaxed, went out for a cruise on Lake Champlain and overall had a great pre-convention time!

**“The BITCH’s auction was something to behold.”**

On our first night in Springfield, Tony Horos (a friend we had met at several catfish conventions in DC) invited us to his in-laws for a barbeque and it was only 20 minutes from the convention hotel! It turned out to be quite a gathering of fish friends and the food was outstanding!

Speaking of outstanding food, the Student Prince restaurant is only two blocks from the hotel in Springfield. They specialize in German cuisine, so many of us were very enthusiastic about going, and a couple of individuals that weren't! After a very tasty meal, everyone in our group was more than happy about the food, and even took home a copy of the menu, hoping to return during the weekend.

Of course, we expect that all the talks at an ACA convention will be very good, full of information and tips, and this year was no different. All the talks I attended, from Ad Konings, Laif Demason, Rusty Wessel and Dr. Paul Loiselle sharing their never ending knowledge of cichlids, to Dr. Claudia Westfahl really explaining nutrition, and Charlie Grimes and Wayne Leibel mixing their humor with their talks, really made quite a lineup of speakers! I did miss a few talks, as there was so much else I wanted to do and see while I was there.

One weekend highlight was the Friday night auction. The [Babes In The Cichlid Hobby](#) (BITCH) have been holding fundraiser auctions and other events at the ACA convention for years and have raised over \$100,000 for cichlid conservation and education. Wow! The BITCH's auction was something to behold. This year's live auction was loud and lively, just like they planned! Free liquor shots with winning bids made the bids flow a little easier as the night rolled on. Their silent auction was huge, too, and almost as crazy as everyone tried to get in their last minute bids.



Members of B.I.T.C.H., Pam Chin (left) and Caroline Estes (right), flank Janine Banks and Tony Horos at the ACA Convention. photo by Anthony Horos

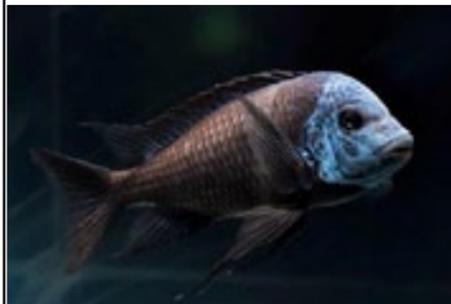
*continued on next page*

I spent more time than usual in the vendor room since Janine had a booth for *AMAZONAS* magazine. Beantown Aquatics and Imperial Fish Farms were setup together in one room, and they filled it up with all kinds of great products for sale, as well as fish direct from the farm. The other vendor room was also full, from Cobalt to Lifeguard to Spectrum Brands (Tetra, Marineland, etc) and Central (Aqueon, etc) and San Francisco Bay Brand/ Ocean Nutrition had most of the major equipment and foods represented. Mazuri also gave away samples of their gel and pellet foods. They sell mainly to zoos and large aquariums, but are making their way into the hobbyist trade. Doug and Julie Patac were setup with his Pleco Feeder and Julie's handmade soaps. And Nancy from South Central Cichlid was there, too, selling her popular caves and other supplies.



Pam Chin watches over the extensive Silent Auction table. photo by Mo Devlin

Although I spent some time in the show areas, I didn't really have time to closely look at each entry. Exhibitors brought some great looking cichlids, and many you don't often get to see at adult size. I still remember the first ACA convention we attended and how in awe we were at the fish in the show. The slide show of the winners from [Mo Devlin](#) during the banquet was amazing! The one that really struck home, though, was the *Tropheus duboisi* photo, as it was nearly the identical pose to the one the TFCB logo was based on!



*Tropheus duboisi* photo by Mo Devlin

For many, the hospitality suite is the highlight of any ACA convention. It's a time to just hang out with lots of other cichlid friends, have a few beers and stay up way too late! We did this each night we were there and had a great time. It's a great opportunity to talk one-on-one with the speakers, or just listen in at a large table full of people interested in fish! The stories that you hear, the informal information you pick up and the new friends you make during the evening are what make it all worthwhile.

After reminiscing while writing this, I'm getting excited remembering all that we did at the convention, and I haven't even talked about the big day, the Sunday Auction! There were many, many bags of fish available, and lots of fierce bidding. It was a hectic start as everyone arrived, bringing in cooler after cooler of fish. After a long day, I only ended up getting four species of fish. The first was a Lake Tanganyikan catfish, *Lophiobagrus brevispinis*. I saw a couple bags of these during viewing, and decided those would need to come home with me. The second was a Lake Malawi cichlid standby that I had never actually kept, *Pseudotropheus lambardoi*, or as it was previously known, the Kenyi cichlid. Kenyi are unique in that the males turn from a blue barred pattern to a solid yellow color as they mature. While there are many cichlids from Lake Malawi where the males turn a different color, none go from a blue to a yellow color. The third and fourth came in an odd mixed bag of fish, hatchetfish with three unknown fish! After some inquiries, we found that they had been in one of the display tanks. We believe they were *Apistogramma agassizi*. I have only ever kept one other species of Apisto and that was 20 years ago. The hatchetfish were ones raised by a Florida fish farm and written about in *AMAZONAS* magazine by Stephan Tanner.

The [2016 ACA Convention](#) will be July 7-10 in Cincinnati, OH, and I think you should plan to attend if you missed this one. And if you did attend 2015 ACA, I bet you're already planning for this year!

## Saltwater Eye Candy The Volitans Lionfish *Pterois volitans*

by Tony Kroeger

Wow! Incredible! Amazing! Lionfish are an eye-catching sight to behold. Native to the tropical Pacific and Indian Oceans, this outlandish fish unfortunately now lives in the Atlantic Ocean, too, where it's found from New York Harbor to the Caribbean and Gulf of Mexico. Thought to have been released by hobbyists decades ago, this invasive species is wreaking havoc on native corals and reef communities where it feeds on young game fish, crustaceans and reef fish. It's a prolific breeder and has no natural predators—other than humans—to keep its numbers in check. Many people now fish for them and report them to be delicious. Fried lionfish is popular on the menu in many Caribbean resorts.



photo source public domain, Pixabay.com

If you choose to keep this unusual-looking and beautiful fish in your marine aquarium, be prepared to house it responsibly. Lionfish can live up to 15 years and require very large aquaria, as they quickly grow to 14 inches or more. They will be okay housed in smaller tanks for the first few months of their life, but will require at least 75 gallons each by the time they mature at a year old. They are generally peaceful with tankmates that they cannot swallow and several may be kept together. They have very large mouths, however, and can consume surprisingly large fish—up to half their own body size! They are sure death to most clownfish, damsels, gobies, shrimp and crabs. They are generally safe with corals and clams. Lionfish are very hardy and disease resistant and tolerate a range of water temperatures and conditions. They are commonly offered in local fish stores at moderate prices.

Those beautiful long fin spines are very venomous, however, and can deliver a powerful sting to the unwary. The larger the fish, the more dangerous and toxic the sting. Always be very careful when feeding or moving a lionfish. They will sting when frightened or disturbed. Use two deep, long-handled nets to catch and move one—one net to capture and one net to cover and prevent jumping. Feed with long tweezers and always wear thick gauntlet gloves when doing maintenance in the tank.

If you do get stung, immerse the wound in the hottest, non-scalding water you can stand for at least 30 minutes because heat degrades the venom. Never apply ice! Seek medical help immediately, especially if you get stung by a large lionfish or receive multiple stings. The venom can cause anaphylactic shock, permanent nerve or tissue damage to affected areas, as well as other complications. Each person reacts differently to the venom and may experience more or less severe pain and symptoms.

Volitans lionfish are not the only species available to hobbyists. Several smaller lionfish species are frequently offered at fish stores and may make better pets for smaller aquariums. Whichever you choose, enjoy this unusual fish and always be careful!

## Raising Royal Farlowella Fry

by Joan Snider

Over my many years of fish keeping, I have kept a huge variety of fish. Keeping fish that I buy, put in my tank and rarely see again has been a consistent occurrence through it all. Therefore, keeping secretive fish such as Royal Farlowellas was a no brainer.

Imagine my delighted surprise, then, upon returning home from a weeklong trip in December to find my usually shy male guarding a huge clutch of eggs on the filter overflow. I had no way of knowing when the eggs were laid, but they were very large and the fry were eyed-up and apparent inside. I knew I had to move them immediately since they were in my 220-gallon tank full of fish eager for a free, fresh meal. Thinking back on it now, I believe the eggs were saved by the fact that a pair of angels were guarding eggs above them and a pair of kribensis were guarding eggs in a cave below them. Those pairs of parents were very aggressive in keeping that side of the aquarium free from predators.

**“The challenge seemed to be getting the fry to eat.”**

The eggs were very tough and hard to remove from the overflow that they were laid on. I was able to scrape them off and my husband caught them in a net. The process of removing them prompted or forced some to hatch. All hatched within a few days of moving. I estimate that I had roughly 70 eggs and I believe it was pretty much a 100% hatch rate.

I had a few concerns about how to best go about successfully raising the fry based on accounts from

others on the difficulties of feeding them. I consulted with a few people in the industry and read accounts online to help me figure out my next steps while the fry still had their yolk sacs. David Banks, [Ted Judy](#) and [Bioaquatix](#) all offered helpful advice.

My challenge was to provide the right combination of environment and food. The fry needed limited space to keep food accessible, decent water flow and ample appropriate food. The trick was to provide all those things in a container that was easily maintained and didn't pollute quickly. I originally divided the fry into a few different containers to see what worked best, and I didn't want all of the fry in the same container if things went south.

I put some in a Marina external breeding box hanging on my 26-gallon bow front aquarium that houses guppies and Ancistrus fry. The water flowed through that box fairly slowly. I also put some in an internal breeding box inside that same aquarium. That breeding box had more water exchange as it had mesh panels for the sides.

The challenge seemed to be getting the fry to eat, and eat appropriate food. Royal Farlowella fry naturally live in an environment in which food is delivered to them by way of the water current. This



Joan Snider has been keeping freshwater and marine animals for most of her life, and especially enjoys researching and solving technical and husbandry

challenges. An avid DIYer, Joan is as well-known in the plumbing departments of local hardware stores as she is in LFS throughout New England. She has a special fondness for unusual dwarf cichlids, plecos, catfishes and doing water changes.



Male Royal Farlowella guarding eggs on filter overflow.

meant that they don't immediately or actively seek food. I needed to replicate a flowing stream with food continually suspended. I added air stones to their containers to keep the water moving constantly. I ground a large variety of foods into a powder and used that mixture in the hope that it would remain suspended long enough for them to feed on. A mortar and pestle is a very useful tool to have in the fish room! Here's a list of some of the foods I used:

- Repashy (Ted's Most Excellent, Powrr-Uup and Soilant Green) Ted suggested that I use this as a powder first, not made into the gel. That was great advice. I started using it as a gel as they grew while continuing its use as a powder.
- Super Blackworm Baby Mix from [Aquatic Foods](#) (Andrew Soh's Pro Gro, spinach, PE mysis, shrimp, plankton, Tetra Color Bits, natural astaxanthin, salmon fish meal)
- Golden Pearls (a "non-sinking" particle diet that remains suspended in water, widely used to replace baby brine shrimp)
- Blackworms (powdered dry)
- Spirulina
- Daphnia (powdered dry)
- Krill
- HBH Baby Bites
- Sera Micron
- Brine Shrimp (powdered and frozen BBS)
- Earthworm Sticks and Flakes
- Chlorella algae
- Liquifry (both liquid and powdered)
- Plecocaine (a favorite)
- New Era's Plec Pellets
- Xtreme Aquatic Foods Cat Scrapers (also a favorite)
- Frozen Bloodworms and Brine Shrimp (shaved)
- Organic zucchini, yellow squash and butternut squash, green beans
- Doc's Eco Egg Brew (this is a liquid suspension, not part of the powder mix)
- Paradigm fish food

I also kept a variety of items in the breeder boxes to provide alternate grazing surfaces. I used Cholla wood, Catappa leaves, Poly Filters and algae-covered

*Continued on next page*



Approximately 70 day-old fry in a dip bucket, ready to move to fry-rearing containers.



To reduce risk, the fry were separated into an external Marina breeder box and an internal box with screen sides. Note the heavy aeration in both.



Fry grew quickly in the Marina breeder box with plenty of aeration and a variety of grazing surfaces.

cichlid stones. My hope was that food would settle on these surfaces and the fry would attach there to feed. This proved to be the case. As they matured, they spent less time on the sides of their container and more on the wood, leaves, etc. I continued to give them the powdered mix, but I added whole pellets and gelled Repashy for them to graze on as they grow.

Initially, I experimented with making up Repashy food and having it gel onto the sides of a ceramic plant pot to see if I could provide them with food this way, since they were intent on staying vertically attached to the sides of the containers. That was a failure when the fry were very small, but worked as they matured.

I kept the fry in the two breeder boxes for the first couple of weeks. I was very diligent about water changes, especially on the external box. I did 100% water changes 1 to 2 times daily, siphoning out leftover food and waste and flushing the water out to clean it completely. I've read differing accounts of the correct water temperature. The temperature in the tank that the eggs were laid in was 75 degrees. I upped the temperature to 82° in the grow outs, but I don't think I'd do that again. I was consistently losing a few fry a day for the first couple of weeks.

**“They are thriving in this system.”**

At around two weeks, the internal breeder box side screen popped out unexpectedly during a water change, releasing the fry into the bow front tank. At this point, I decided to leave some in the bow front with the Ancistrus and guppy fry and move some into a Fluval Spec V. The Spec V was set up with the Cholla wood, driftwood, algae-covered cichlid stone, etc. I was curious to see how they fared in the different living situations and how it might affect their growth rate and survival.

Ultimately, the Spec V was difficult to keep clean and some fry were able to get into the filter compartment. I decided that the Spec V was not a good option. I felt that the fry I left in the 26-gallon bow front were not growing as well as the ones in the original external breeder box either, possibly because of difference in food concentration. The Marina breeder box was really easy to keep clean while providing a dense concentration of food. So, of those initial options, I think it provided the best conditions for growth. The mortality rate decreased significantly after the first week or so and I stopped losing fry around 3 weeks.

When the fry were roughly 5 weeks old, I put together a grow-out system to house all the fry and any future eggs and fry (see DIY Tips, Tricks & Treats on page 15). They are thriving in this system and I will keep them there until they are ready to sell. It allows me to control the water level and current, and provides a large volume of water so the food concentration doesn't quickly pollute the water.

To increase the natural grazing surfaces, I have also added more botanical variety from Tannin Aquatics, which the fry really utilize. They put together an assortment of leaves, pods, wood, and more for me with the fry in mind. (See review of Tannin on page 19.)

The fry have been growing quite fast, but there is significant difference in the largest versus the smallest. Maybe a gender difference? I can't really say that the container/food concentration brought about this difference as there ended up being large and small in all containers. The Marina external breeder box did produce the largest fry, though. At six weeks, the fry size ranged from 1" to 2-1/2"+ and their growth rate slowed down considerably.

The Royal Farlowellas laid eggs again a few weeks ago, but there were only six eggs, possibly due to predation. I'm hoping they lay a large clutch again soon; I'll be ready for them.

## DIY Tips, Tricks and Treats

### Fry-Raising System for Easy Maintenance

*By Joan Snider*

Raising fry can be a fun and rewarding part of fish keeping. It can also potentially help to offset some of the costs associated with the hobby—or at least we'd like to think so.

Providing the fry with optimal conditions for success is often challenging, however, depending on the type of fish involved. The four environmental factors that I am most concerned with are:

- An appropriate container. The container must allow for safety from predation. It must also be the proper size for growth while not requiring the fry to expend too much energy while seeking food. In some cases, it's very important for container to replicate the fry's natural environment.
- Providing a variety of species-appropriate, nutritional food
- Clean water
- Ease of maintenance

I have successfully raised two species of fry that presented extra challenges in providing the proper environment. The first was seahorses. They require a lot of food; yet move very slowly, so catching live prey can be difficult. Seahorse fry will hunt for food, but they also depend on suspended food coming to them to a certain degree, so water movement is important. But, when providing a lot of food, water conditions can deteriorate very quickly.

The second species was Royal Farlowellas (see article on page 12). Raising this species reminded me of the system I put together for my seahorses. In nature, Royal Farlowellas live in river environments where food comes to them due to water flow. Upon depletion of their yolk sac, fry don't actively seek food. I was very aware of the challenge many hobbyists have faced raising these fish as they watched the fry starve and die. I tried a few options, but ultimately put together a system that was similar to the one I did for the seahorses.

I've accumulated a lot of random supplies after keeping many hundreds of gallons of fish, both saltwater and freshwater, for many years. What I used for this project was:

- A large container for a sump. I used a 40-gallon plastic Brute trash can that I happen to have around from my saltwater days of mixing up vats of saltwater for water changes. You could also use a spare tank or other fish-safe container.



This easy-to-make sump system provides ideal conditions for raising fry.

- A container to actually hold the fry. I used a plastic storage box that sits right on top of my Brute container.
- A submersible return pump that can push the water up to the necessary height
- A bulkhead, available at plumbing stores or online
- Appropriate sized PVC or tubing to fit the bulkhead and submersible pump
- Sponge filters, bio media, air pump

Luckily, the only thing I had to buy was the plastic storage container to actually house the fish. I cut a hole in the bottom of the container to accommodate the bulkhead for the drain. I fit a piece of PVC into the bulkhead to control the water level of the overflow drain. I could adjust the height of the PVC tube to change the water level as the fry grew and sought food more actively. A sponge filter fits over the PVC to keep the fry from entering the drain. The container sits on the Brute trash can so the water drains directly into the Brute.

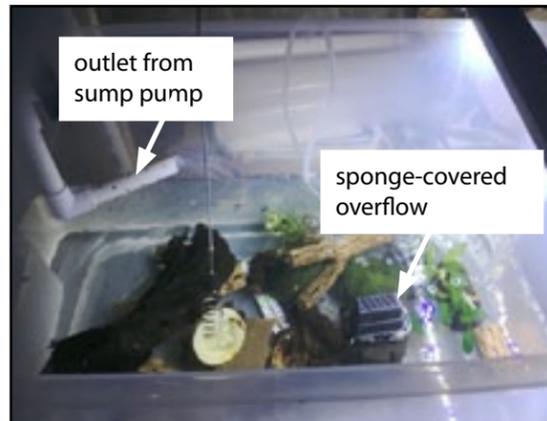
The heater and all filtration is located in the Brute trash can. The water is filtered with air-driven sponge filters and a hang-on-the-back filter. I also threw a lot of bio media into the Brute for a couple of reasons. It serves as added bio-filtration, plus I will have seasoned media for setting up new tanks (which I do with alarming frequency). To neutralize toxins, I also add Poly Filters to both the Brute and the plastic container holding the fry.

The submersible pump sits in the Brute and the output goes up and into the plastic container. I also used PVC for this and included a valve to control the flow. By adjusting the water output, I can control the water flow, both in direction and force. In this case, I wanted a decent flow for the farlowellas. When I made a similar set up for my seahorses, I wanted a circular flow, such as is found in a round Kreisal tank with no corners. I added a fairly powerful air stone to the container, as well.

Cleaning the system is done very easily by changing the water in the Brute. I also siphon out waste and excess food in the fry container with a turkey baster once or twice a day. At first, the fry need the food to be suspended so it was carried to them. I have since added some less-fussy *Ancistrus* fry to the container to be raised along side the *Farlowellas*. I am getting a very good rate of growth. I keep a lot of different surfaces in the fry container for the fish as they have grown—cholla wood, Malaysian driftwood, Poly Filters, plants, etc. Overall, I am very happy with this setup for raising fry as it meets the criteria I was looking for in ease of maintenance and excellent fry growth and health.



Water in the Brute sump passes through sponge filters, biomedica and a HOB filter.



PVC outlet (left) from the submersible pump in the Brute sump creates a current in the fry container. Water overflows back into the sump through the bulkhead riser tube (lower right), which is covered with filter foam and a black strainer.

## Making an Inexpensive LED Aquarium Top

By Ira Gardner-Morse and Ann Whitman Photos by Ann Whitman

This project makes an inexpensive cover, complete with energy efficient LED lighting, that's suitable for growing low to medium-light plants in 10, 15 and 20-gallon aquariums. For deeper tanks or high-light plants, add another strip or two of lights.

### Materials

- SMD 5630 Cool White LED Strip Lights
- LED 12 mm connectors
- DC power supply
- DC power plug, female
- Extra wire
- Aluminum window screen framing
- Plastic window screen corners
- 4 or 5 mil clear plastic sheeting
- 0.175 inch spline
- Super Glue, Electrical tape

### Tools

- Hack saw to cut screen frame
- Small Phillips screwdriver
- Spline tool
- Razor blade
- Scissors

### Optional Tools

- Soldering Iron
- Wire cutter/stripper

## Assembly

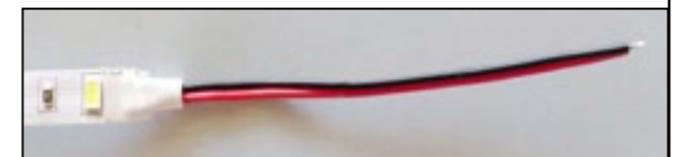
**Important—read through all the instructions before beginning.**

As you assemble the light strips and connectors, remember that red wires are positive (+) and black wires are negative (-). Keep them consistently and correctly oriented at every connection.

1. Cut four pieces of window screen framing to fit the dimensions of your aquarium. Make the frame narrower to accommodate HOB filters.
2. Assemble the frame, keeping the channel side of the frame pieces all the same side up (see photo).
3. Cut three lengths of LED strip lights, making each one about 2" shorter than the inside of the frame. **Important:** Cut on the tiny x in the middle of the copper spots. **Important:** One of the lengths must have a "pigtail" attached (see photo). If the pigtail is not pre-attached, solder a 4" length of wire to the copper dots at one end of a strip and wrap securely with electrical tape.
4. Attach connectors to the LED strips so that all three strips are connected. **Important:** Align the LED strips so that tiny writing (12v) is all facing the same direction and all the red wires of the connectors are on the + side of the strips.



Slide frame parts together, keeping the open channels on same side.



The pigtail is a red and black wire that's soldered to the copper spots at the end of the light strip. The black wire is connected to the copper dot marked with a - symbol.

Note the tiny + and – on the strip near the copper dots (see photo). Open the connectors and slide the end of a strip into the slot. Align the parts so that the copper dots on the strip are under the contacts in the connector. Snap the connector shut firmly.

5. To attach the female DC plug to the pigtail, strip the wires so that about ¼” of copper wire protrudes from each. Insert the red wire into the + side of the DC plug and insert the black wire into the – side of the plug. Tighten firmly with screwdriver to hold the wires in place.

6. Plug the female DC plug into the male DC plug that is attached to the power supply. Plug the power supply into the wall outlet to make sure all the strips light up. If some strips do not light up, review steps 4 and 5 and check all connections, try reversing the strip between the connectors, or try a different connector.

7. Using scissors, cut two pieces of plastic sheeting about 3” longer and 3” wider than the assembled frame. Loosely tape one sheet of plastic down to a work surface to hold it flat. Center the frame over the plastic.

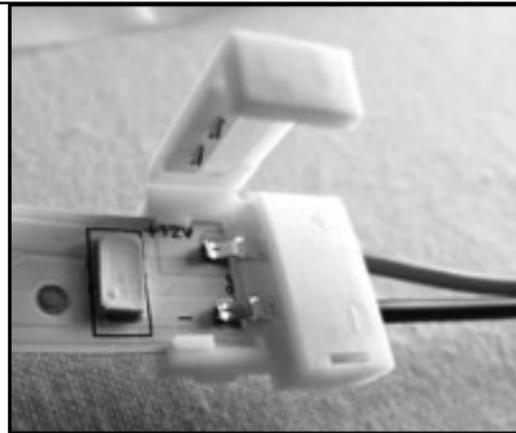
8. Lay out the connected strips on the plastic, inside the frame. Peel off the backing from the LED strips and stick them down to the plastic. Use short pieces of electrical tape to fasten the connector wires to the plastic. Cut a small slit in the plastic for the DC plug and pigtail to come through.

9. With the LEDs facing up, cover with the second sheet of plastic. Lay the two sheets of plastic, with the LEDs sandwiched in between, on top of the frame (LEDs and frame channel side up).

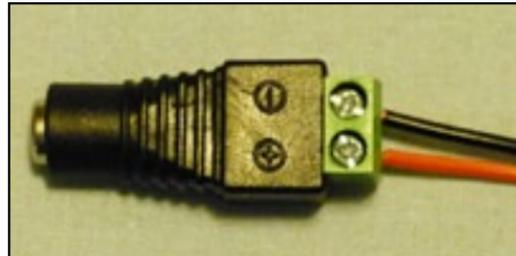
10. Using the spline tool, insert the spline into the channel to hold the LEDs and plastic sheeting to the frame. Cut the excess greenhouse sheeting away with a razor blade or scissors. Pull the pigtail through the slit and glue it to the top of the frame. Attach the power supply, and you’re done!

**Alternative Options:** If you already have a glass top on your aquarium, you can stick the LED light strips onto a sheet of glass instead of sandwiching them between plastic sheeting. Use an old section of glass top or buy a piece to fit. Be sure to sand or tape the edges for safety. Attach stick-on rubber feet to act as spacers that hold the LEDs above the aquarium top. Peel and stick on the LED strips, as described.

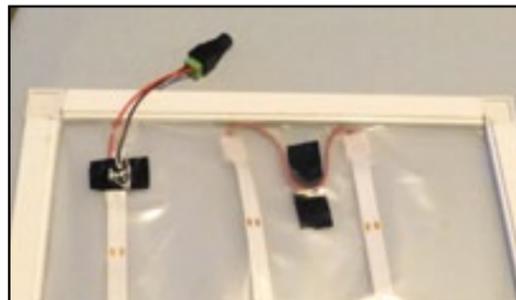
To make a more traditional-looking light fixture, cut a section of plastic rain gutter to the length of your tank, minus an inch or so. Drill a hole in one gutter end cap that’s wide enough to pass the DC plug  
*continued on next page*



Note the tiny + and – on the strip. Slide the strip into the connector so that these are aligned with the red and black wires. The copper dots must be fully under the silver contacts.



The female DC plug is attached to the red and black wires of the pigtail. Note the red wire goes into the side marked with a + symbol.



Cut a small slit in the plastic for the power cord. Use electrical tape to secure wires.

through. Attach the gutter end caps to the gutter. Spray paint the outside of the gutter black, if desired. For better light reflection, cover the inside of the gutter with silver reflective tape. You can find rolls of this in hardware stores.

Stick the LED strips inside the gutter as described previously. Use a dab of silicone or electrical tape to seal the hole in the end cap after inserting the plug and cord. You can also remove the electrical parts from an old aquarium hood and use it instead of a plastic rain gutter. Place the fixture over a glass top to protect it from water damage.

## Links We Like

### Review of Tannin Aquatics

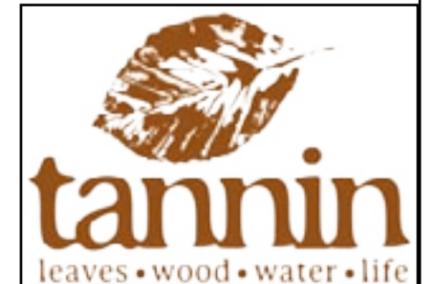
By Joan Snider

Like most fish fanatics, I get enthused about most things aquatic. I happened upon an online company called [Tannin Aquatics](#) a month or so ago that immediately caught my attention.

The owner, Scott Fellman, is a widely known professional writer, speaker and all around fish expert. I had the pleasure of hearing him speak several years ago in Burlington, Vt. Previously a saltwater guy, he has changed course and stayed busy within the hobby. His newest freshwater venture is selling aquatic botanicals and other useful goods.

I’ve always loved setting up aquariums that replicate nature and the products on his site definitely appealed to me. I’ve placed two orders so far and I couldn’t be happier with the various tropical pods, leaves, wood, cones, and food that I’ve received. For my first order, I didn’t know where to start, so I ordered an “Enigma Bag”. I gave Scott an idea of my tanks and fish and he thoughtfully and generously picked out great items, specifically for the species I mentioned.

It’s been interesting to see how my fish react to these additions. My plecos and farlowellas now spend most of their time on and in botanicals like Savu Pods, Jungle Pods, Cholla Wood and Banana Stems. My Apistos, checkerboard cichlids, Corydoras, etc. spend their time swimming amongst various pods and leaves. I really think creating such an environment helps bring about natural behavior and helps instigate spawning behavior. My sister, Ann, also received an order from Tannin that included the “Apisto Pack”. She was delighted to have her previously stubborn *Apistogramma cacatuoides* spawn within a week of adding Catappa leaves and Jungle Pods to their habitat. I’m loving my tanks with these natural botanicals and couldn’t be more impressed with all my interactions with Tannin Aquatics. Find them at [tanninaquatics.com](#) and on Facebook.



Jungle and Kavu Pods from Tannin entice *Apisto. cacatuoides* to spawn. photo by Joan Snider

## Hobby History

### Vermont Aquarium Society circa 1970

By David L Banks Jr

This column is the first of many installments in which I will look at the history of TFCB, as well as many other aquarium hobby and fish-related topics. Since this is also the 60th year of the NEC—and I am the NEC historian—I will most likely share much about the NEC history here, too. This month, I want to share a connection related to TFCB, but almost 20 years prior to TFCB being formed.

I was contacted in late 2015 by someone looking to sell many used aquariums. I replied that I could pass this information along to our TFCB members. We also wanted to come take a look at what they had, specifically a tank they described as an agate tank. We made plans and Janine, Max and I went to visit.



Donn and Diane Siegriest live a ways out of the high traffic areas; I've never been that far down that road before. After the road turned to dirt, it was only another mile or so. The house was not hard to find, as it was well lit and marked. They had mentioned several larger stainless steel tanks, 50 gallons and 55 gallons, along with some smaller tanks and some all-glass tanks. The stainless steel tanks were the old standards from the 1950's thru the 60's into the early 70's. Although very nice looking, these tanks have really gone out of style and very few people are interested in having them.

Donn had raised angelfish in the late 60's and early 70's and sold them to many of the stores in the Burlington area. Max, who grew up in Burlington and had fish as a kid, had never heard of some of the stores Donn mentioned, while others he fondly remembered. I had heard of a couple, but, since I first got involved with fish in Burlington around 1983, I didn't expect to know many.

It was a chilly night, and the tanks were in an unheated detached garage, all neatly lined up in the back. For the most part, they were in excellent shape and had full stainless hoods and lights, too. Janine and I had already made a deal for the small 8-gallon agate tank. We thought that one of the larger tanks might make a great display and conversation piece at the upcoming NEC 60<sup>th</sup> anniversary convention and asked if they would be interested in having us take one and place it in the auction. Donn and Diane agreed, so it will be on display in CT at the convention.

We also began chatting about our club, TFCB, and they mentioned that they had been involved in a club in Burlington in 1970, the Vermont Aquarium Society! I had heard of this club and even have several small pieces of information regarding them, an address and name and the dates 1970-71. Turns out they were very involved, had hosted a meeting at their house, written articles for their newsletter and were officers and even the newsletter editor! Then, they told me they thought they might still have copies of those newsletters and they let me borrow them to scan. Some are very hard to read as they were mimeographed and have faded over time, including the very first one from September 1970. I will share some of those scans in future articles, too.

It was great to make this connection with the previous club in Burlington. We are planning to get together again, and maybe we can talk them into doing a write-up about the Vermont Aquarium Society back in 1970!

## CALENDAR OF COMING EVENTS

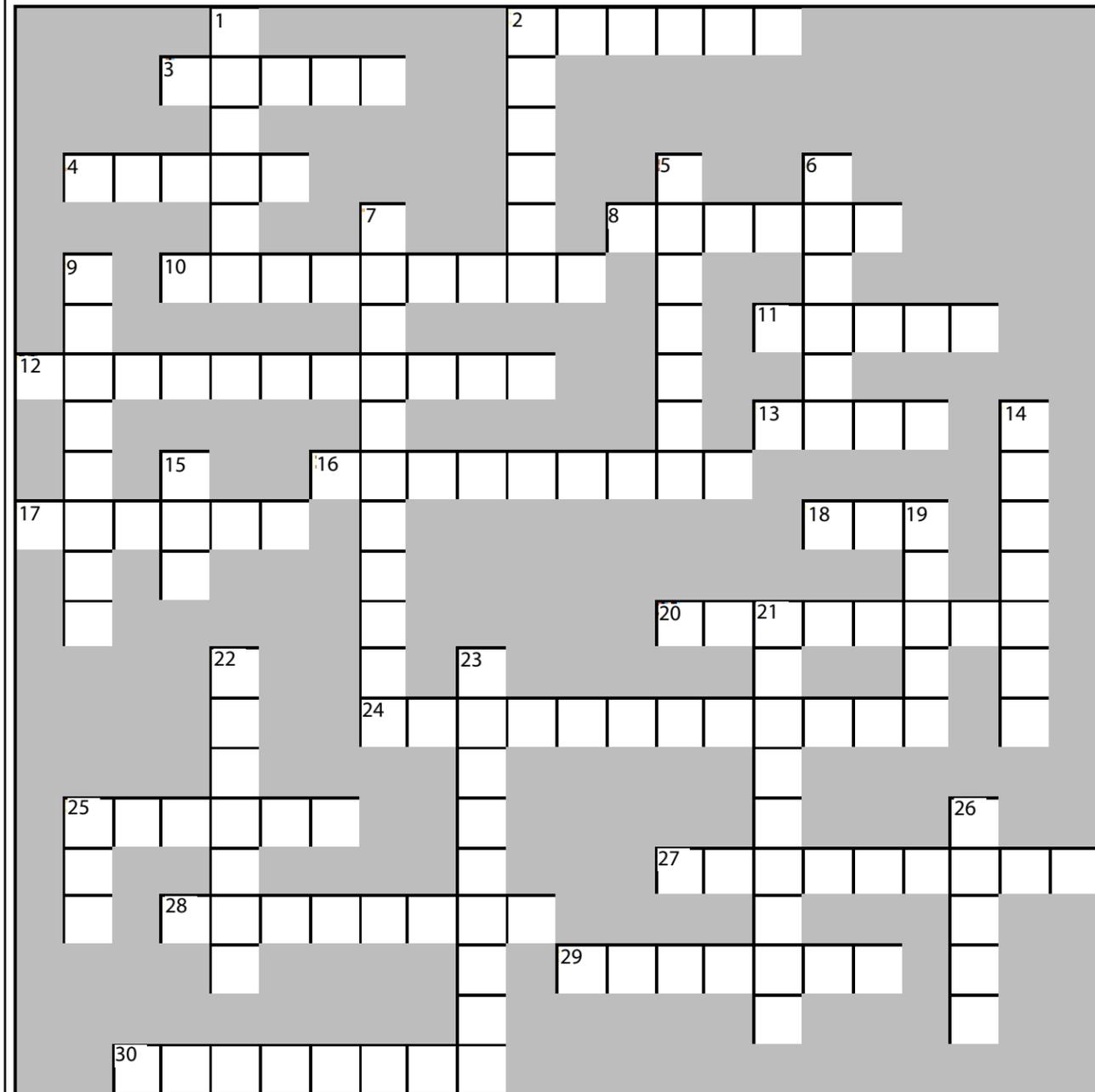
- March 12 [TFCB meeting](#), special saltwater event with Justin Credabel, 1:00 to 4:00, Holiday Inn, So. Burlington, VT
- March 15 [OVAS meeting](#), Ira Gardner-Morse workshop on making LED lights, 7:00 Maclure Library, Pittsford, VT
- March 19 [Tropical Fish Society of Rhode Island](#) (TFSRI) Spring Auction, Cumberland, RI
- April 3 [New Jersey Aquarium Society](#) (NJAS) Spring Auction, East Brunswick, NJ
- April 8-10 [Northeast Council of Aquarium Societies](#) (NEC), 41st Annual Convention, specialty club shows and auctions, Rocky Hill, CT
- April 12 [OVAS meeting](#), Steve Edie speaker, 7:00, Maclure Library, Pittsford, VT
- April 14 [TFCB meeting](#), Steve Edie speaker, 6:30, VFW, Essex Jct, VT
- April 18 [Boston Aquarium Society](#) (BAS), Breeder Auction, NE Aquarium, Boston, MA
- April 24 [Jersey Shore Aquarium Society](#) (JSAS), Spring Auction, Manasquan, NJ
- April 29 - May 1 [American Livebearers Assoc. Convention](#) (ALA), South Bend, IN
- April 30 [Central NY Aquarium Society](#) (CNYAS) Annual Auction, Syracuse, NY
- May 10 [OVAS meeting](#), Ann Whitman speaking on outdoor fish and water gardens, 7:00 Maclure Public Library, Pittsford, VT
- May 12 [TFCB meeting](#), Ann Whitman speaking on outdoor fish and water gardens, 6:30, VFW, Essex Jct, VT
- May 13 [Brooklyn Aquarium Society](#) (BASNY), Giant Spring Auction, NY Aquarium
- May 14 - 15 [South Jersey Guppy Group](#), IFGA Sanctioned Show & Auction, Griggstown, NJ
- May 15 [OVAS Auction](#), registration at 9:30, auction at noon, new location! American Legion Post #31, Rutland, VT
- May 15 [Greater Hartford Aquarium Society](#), Auction, Windsor Locks, CT
- May 27- 29 [American Killifish Assoc. Convention](#) (AKA), Denver, CO
- June 7 [OVAS meeting](#), Carolyn Estes speaker, 7:00, Maclure Library, Pittsford, VT
- June 9 [TFCB meeting](#), Carolyn Estes speaker, 6:30, VFW, Essex Jct, VT
- July 7-10 [American Cichlid Assoc. Convention](#) (ACA), Cincinnati, OH
- August 21 [NEC Summer Auction](#), Westport, CT
- Sept 8 [TFCB meeting](#), 6:30, VFW, Essex Jct, VT
- Oct 13 - 16 [All Aquarium Catfish Convention](#) (CatCon), Hyatt Dulles, Herndon, VA
- Nov 4 - 6 [Aquatic Experience](#), Schaumburg, IL

# Crossword

## Central America and Mexico Theme

by Ann Whitman

Test your knowledge of Central American fish, animals, plants and geography. [Answers](#) on page 8.



### ACROSS

2. Dried cactus stems frequently used in shrimp and lizards tanks
3. Preservation program dedicated to education and endangered fish conservation
4. Its skeletal remains form the backbone of the Mesoamerican Barrier Reef
8. Third largest feline in the world
10. Trees with tall roots that grow at the edges of coastal waterways
11. AKA *Poecilia reticulata* or million fish
12. This colorful and notoriously pugnacious cichlid shares its name with a famous boxer
13. Native people of southern Mexico, Guatemala and Belize, known for their ancient and highly developed civilization
16. Country known for ecotourism
17. 80% of the second largest barrier reef in the world lies just off shore of this country, a well-known diving destination
18. Slender, predatory fish with a long, toothy jaw
20. Zika virus vector
24. Livebearer with impressive dorsal fin, native to Texas and Mexico
25. Fruit of Chiquita fame
27. Aquatic plant with round, floating leaves and large, showy flowers
28. Colorful amphibian that secretes poison from its skin

29. Common name of this Central American cichlid is derived from its resemblance to old-fashioned prison uniforms
30. Blind tetra found in subterranean areas of Mexico

### DOWN

1. Country famous for its canal and woven hats
2. A natural sinkhole formed in the limestone bedrock, scene of ancient rituals
5. Ocean on the west side of Central America
6. Lake, in Spanish
7. Genus that includes the T-bar Cichlid
9. Large livebearer, commonly called "four eyes"
14. Synonym for habitat; a type of aquarium that simulates a specific habitat
15. River, in Spanish
19. "Wet" season that lasts from May to November
21. The common name of this popular livebearer is derived from the extension of the lower rays of the male's caudal fin
22. Mexican peninsula containing a popular spring break destination
23. Popular cichlid named for its intensely red throat, especially when breeding
25. Nocturnal, flying mammal
26. Number of countries in Central America, including Mexico



NorthEast Council of Aquarium Societies

# 41st Annual Convention

APRIL 8-10, 2016  
Rocky Hill, CT



## Celebrating 60 YEARS of the NEC!

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**BOSTON A.S. 100th ANNIV. HISTORY DISPLAY!**

**AQUARIUM PHOTOGRAPHY COMPETITION!**

**FRI-SAT NIGHT **FLUVAL** HOSPITALITY ROOM!**

**3-COURSE GOURMET BUFFET MEAL OPTIONS!**

### 14+ SPEAKER PROGRAMS!



JOE FERDENZI (NY) DR. IAN HARRISON (NY)  
LAWRENCE KENT (WA) DR. PAUL LOISELLE (NJ)  
STEVE LUNDBLAD (OR) DR. JOHN LYONS (WI)  
STEPHAN TANNER (MN) *details on our website!*

### 4 SPECIALTY CLUB MEETINGS!

*Open to all registered attendees*

**NORTHEAST LIVEBEARER ASSOC.**

*Guest Speaker: Bill Gill (ME)*



**NEW ENGLAND CICHLID ASSOCIATION**

*Guest Speaker: Lawrence Kent (WA)*



**NORTHEAST FISH TUBBERS & WATER GARDENERS**

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

**S. NEW ENGLAND KILLIFISH ASSOC.: Auction!**



**Exquisite guest rooms & amenities!**

### NECA CICHLID SHOW!



### IGEES GUPPY SHOW!



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

**REGISTER & SCHEDULE INFORMATION:**  
[www.northeastcouncil.org](http://www.northeastcouncil.org)



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