Livebearer News

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BRITISH LIVEBEARER ASSOCIATION

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Data Protection Act

In order to comply with the requirements of the Data Protection Act, we need to inform members that their name, address, email address and telephone number are being maintained on a database, the purpose of which is for the distribution of the Association's magazine and to inform members of forthcoming events. This information will not be provided to any other organisation for any purpose whatsoever without prior consultation. The association agrees to remove any details at a member's request.

Editorial

I would like to start one again by thanking Alan Rothwell for his article about two live foods that he is culturing, blackworms and Dero worms. Please excuse the quality of the photos as they appear in this newsletter – my printer/scanner is not working and so I had to take a photo of Alan's printed photos using my phone and then transfer them into the newsletter. Of a much better quality are the photos from J. Sara Fulton – thank you again Sara. Also thanks to Holly Walford for her article about *Ataeniobius* toweri and to Clive Walker and Bill Galbally for their thoughts on keeping guppies in with other livebearers. Come on the rest of you – all articles are welcome! Any livebearer, any topic, collecting, keeping, breeding, anything! Just get writing. Don't worry about editing, I will do that. The article below, by Derek Lambert, was first written over twenty years ago but is both relevant and (I thought) interesting today.

At the end of this newsletter are the "Diary Dates". I hope to see as many of you as possible at these events and if you do make it to any of them then please come and say hello. A lot of thought and planning has already gone into the shows and auctions. Please see Steve Oliver's paragraphs about procedures.

Erratum

The pictures of Limias that went with the article about this genus in the newsletter from December of last year were taken .by *Rodet Rodriguez-Silva*. My apologies for the omission.

Livebearer Milestones

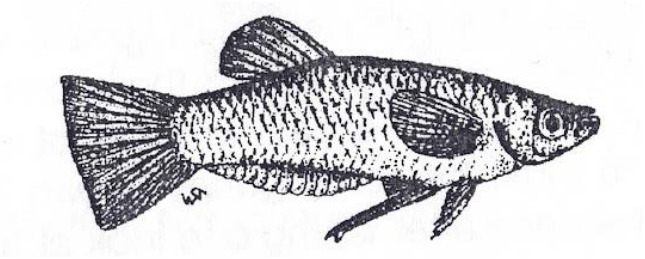
By Derek Lambert

Throughout my livebearer keeping days there are certain fish that mark outstanding moments in my progress through the livebearer world.

Cultivated Red Wagtail Platy

This was the first livebearer I ever bred. At the time I was only about 10 years old and my grandmother had come to stay with us. This meant I had to sleep downstairs next to my fish tank. I remember sitting up to 2am watching my Red Wag Platy give birth while I caught the babies out.

Alfaro Cultratus Knife Livebearer



This Species was the first unusual livebearer I managed to obtain and breed. I came across them in The Fish House on the edge of Kingstone-on-Thames in 1979 and bought a trio. A few months later they started producing young for me, and these went on to win at fish shows on a regular basis. Mac of Kingston and District Aquarist Society noticed that I had developed a particular interest in livebearers and gave me a copy of “Livebearing Aquarium Fishes” by Kurt Jacobs (I still have it) and I discovered that there were at least 156 species of livebearer known at that time. This led me to join a specialist society and try to learn more about these fish. After working with over 200 species of livebearers I am still fascinated by them and am always on the look-out for new ones.

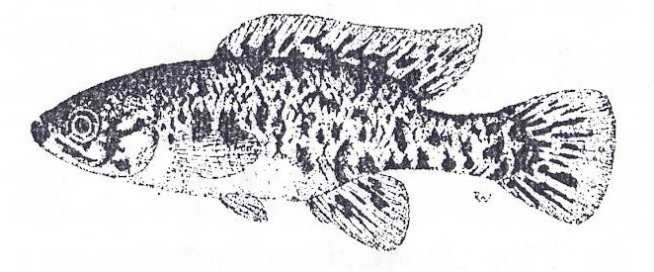
Double Sword Guppy

This is one of my all-time favourite fish. I have worked with many different strains of guppy over the years, but one particular strain caught my eye when I was over at a Guppy show in Holland. I was so impressed that I bought the show winning team of three males. Since the European breeders would not sell the females to go with them, I had to outcross the strain to some American female Double Swords and carefully selected over a number of years to re-establish the strain. One of the males (pictured on the cover of Viviparous 7) won a best in show at a large open show. Pat heard one exhibitor saying “it must be some guppy to win Best in Show” and stomped off. She was stunned to silence after taking one look at him.

Gambusia Melapleura

This fish was the first livebearer which I caught in the wild. In 1983 I collected 10 small fry in the Great River, Jamaica and tried to bring them home alive. Out of these 10 fish only 2 survived the journey home and it was several months before I knew I had a pair. This pair dropped many broods for me and I have maintained the strain continuously ever since. So far I have taken them through many generations with no ill effects. In 1991 I returned to Jamaica and went to exactly the same stretch of river to re-collect, so that I could compare them to my captive-bred fish. Despite many generations of close in-breeding, the captive-bred fish differed in no discernible way from the wild fish. The only difference I could find was that the wild fish had a few parasites embedded in them.

Turner’s Sailfin Goodeid, *Hubbsina turneri*



This fish has a special place in my life. For many years it was thought to be extinct by some scientists and was even listed as such in the German Livebearer book by Manfred Mayer et.al. In 1987 I went to Mexico and fished Lake Zacapu collecting a bunch of baby Goodeids. At the end of the trip I was bagging up the last

of the fish at 3am when I came across a strange looking Cichlid fry amongst the Zacapu collection. I bagged it and placed it on a pile of bags to be packed away. Just as I caught up the next fish the alarm bells started to ring in my mind. Cichlid? Was that really a Cichlid? I lifted the bag and looked closely at the first *Hubbsina* to be seen alive for a long time. Pat jumped out of bed to check the other babies to see how many we had. We only had three, but at least they proved the species was still alive and kicking and where it could be found.

Have you had fish that marked the milestones in your Livebearer keeping? Please write and tell all of us about them.

Chairman's report on 2021 *from our new Chairman, Steve Oliver*

The pandemic made the start of 2021 a challenge for the BLA with the Covid restrictions preventing us from hosting any sort of event; the effect of the restrictions (although very necessary) could have been very damaging to a club such as ours. Fortunately, we were able to ride this through with what, at the moment, appears to be very little damage to the BLA.

The lifting of restrictions in July gave us our first chink of light at the end of the tunnel and allowed us to organise and hold our first event in over 15 months. We were fortunate to be able to book an event at Braunston WMC in Leicester, just as the restrictions were lifted. The event was extremely well supported. The highlights of the show being the auction and a fantastic livebearer show organised and ran by Tim Edwards.

The theme for the show was to raise money for both Chester Zoo and Tropiquaria; both of these Zoos have struggled by not being able to generate their own money through visitors and were facing financial difficulties. The proceeds of the day were split equally with both zoos receiving £600 each. This was an awesome feat as well as a great day, and I would like to congratulate and thank everyone involved.

September saw another milestone with the formation of the Fishkeepers extravaganza. A joint show organised in collaboration between ourselves, the British Killifish Association, the British Cichlid Association and our sister club the Fancy Guppy's UK. All four associations came together to put on a fantastic weekend. Five auctions, guest speakers and plenty of socialising which gave us all the opportunity to make new friends. We Hope this will be a permanent addition to our events calendar and next year's is already in the planning.

Let's hope 2022 is far better than the previous two years

Steve

Changes to our auctions *, from Steve Oliver.*

There have been concerns raised recently amongst various associations such as ours about auctions involving livestock. The issue itself, and exactly what it concerns, are, at best very clouded. The main area of concern appears to be centred on who is permitted to buy fish through an auction and/or their connection to the club. There also seems to be a rumour of financial sanctions levied on the clubs themselves; these could just be rumours and are at the moment unsubstantiated. However, without being able to clarify the situation and taking the stance that there isn't smoke without fire, the committee have decided to put new practices in place for our auctions to ensure we are acting within all perceived guidelines.

At the spring show the following changes will come into place, anyone who wishes to buy and/or sell fish at our auctions and sales tables, who isn't already a member will need to take a temporary day membership costing £2.00.
Please note, that new members who join on the day, will immediately receive their full benefits as a member. If a new member has already paid for a temporary membership, this will be refunded.
To ensure the new practice is followed, all auction bids will be conducted through a bidding card system.

All transactions such as temporary membership, full membership, submitting auction lists and collecting/returning bidding cards will be carried out at the membership desk.
The bidding card system does have one major benefit to us as an association; we will be able to keep track of all fish going through the auction. Those fish with population or collection data will be on our database and help us with future and current conservation projects.

Collection data

You will be aware that some species within the hobby are identified with collection data. Collection data is becoming more important as the hobby goes forward. This information helps to keep specific species and even populations from being mixed and lost to the hobby. The maintenance of a pure-bred species/population from a specific collection point means that should this particular fish becomes extinct in the wild, there is always a hope of a new colony being reintroduced sometime in the future. The last thing we would want to do as aquarists and conservationists is to see the species we care about become extinct and not be able to help.

ESU

You would have also noticed the use of the term ESU. The term ESU is an abbreviation for Evolutionarily Significant Unit. Each unit expresses an isolated population with different genetic characteristics within one species. The abbreviation for an ESU is composed of three letters of the genus, followed by the first two letters of the species name and an ongoing number in each species.

A typical example in use is for "Xenotoca" doadrioi, and the ESU for this species is Xendo1 (Xen do 1). Currently, for "Xenotoca" doadrioi there is only one recognised ESU. However, it is advised that fish from different collections points remain as separate populations. Although they may have the same ESU, and although it is unlikely, there is an outside possibility that further ESU's within a known species could be discovered.

Please note: When you mix fish from different locations points or do not know the collection point, the heritage of the fish is lost, and therefore can only be classed as an aquarium strain. That being said if you have a specific species, you have maintained for many years and haven't altered the bloodline, there is a possibility (however remote) that you already keep a lost species. If you believe this is the case, please contact the committee.

Thoughts from our former Chairman, Paddy Davies

Random Thoughts: Regarding endangered species in shops. I am feel that location data should not be trusted and therefore any species should be sold without data (aquarium strain), as this is safer. This is how other endangered/threatened species are sold (cherry barbs, Bangai cardinals, Dennison barbs, Asian arrowana etc . As a retailer, I am uncomfortable with selling *Goodieds* as most people cannot/ will not provide for them correctly. But many/ most people in our club will have been introduced to this group of species from a shop - seeing an obscure fish and then finding out more about them. So shops such as Aqualife [Leyland, Lancashire] do provide a need, and may be better than our Glasgow eBay multiple identity friend. At least the purchaser can see the fish and choose to buy or not. I personally feel we as a club must be inclusive and non judgemental. We can educate keepers, but should not proscribe what they can and cannot do, and in fact we cannot. We need to engage everyone we can - we can't afford to be precious. Shops are an easy target! More worrying for me is the amount of fish that go through the BLA auction without data - sometimes there is no provenance, but often there was but it has been lost/ mislaid. Finally, my personal opinion is that it is human nature to accumulate and acquire new shiny species - we have to accept this. But we really need to concentrate on preserving what we have already in the UK. The GWG is doing a pretty good job at maintaining the breadth of species of *Goodeids* in Europe and beyond. We in the UK don't have a huge number of keepers. Are we better keeping 20 species in good numbers and genetic diversity or 40 species in low numbers and increased in breeding?

A reply from Bill Galbally

"Are we better keeping 20 species in good numbers and genetic diversity or 40 species in low numbers and increased in-breeding?" I want to do both. I think the key to this is zoos and aquariums such as the National Sea Life Centres (there is a good one in Birmingham). We need to plan to engage with these. I don't mean zoos like Chester, where they already do a good conservation job. I mean that there are many, many other zoos that have bodies of water inside and all they use them for is koi carp or goldfish. These pools would be ideal to maintain a species - or even more if they were compatible species of different families. If we are to go to the next level for conservation - we need to tap into this vast resource.

Ataeniobius toweri

By Holly Walford

Ataeniobius toweri is a critically endangered species of livebearer and is endemic to the Mexican federal state of San Luis Potosí and part of the Río Verde fish fauna. It inhabits several thermal springs and outlets of the town of Río Verde, draining into the Arroyo Santa Rita. The species is named after William Lawrence Tower from the University of Chicago who first discovered the species. In the wild, Ataeniobius toweri lives in quiet water with little or no current. It can be found along shallow margins of lagoons, marshes, and ditches, but also in creeks. Interestingly, unlike most Goodeids, they prefer warmer temperatures. I have found this species can be a bit shy when kept in small numbers but becomes more active when kept in much bigger groups with plenty of floating plants. Looking at the natural habitat of Ataeniobius toweri, it shows that the species may prefer a habitat with very slow to moderate current, with gravel substrate, lots of branches and live plants. This species will do well in a species only tank. At first appearance, males and females are not very easy to distinguish and will often look the same. Males have a modified anal fin for reproduction called an andropodium. Male Ataeniobius toweri also have a slightly bigger dorsal fin than females. A difference in colouration is not highly visible except for the lovely blue caudal fin in males which will usually show itself during breeding time. This is why the species is also known as the Bluetail Splitfin. What should you feed them? Ataeniobius toweri are omnivorous and will feed very well in the aquarium. You can offer them flake food, granules, and sinking pellets with the occasional bit of brine shrimp as they can be greedy eaters. Make sure to offer them vegetable-based foods for the most part to keep them healthy and strong as it plays a big part in their diet.

How easy is this species to breed? Under the right conditions, it is quite easy to get a flock breeding colony. Parents can still chase and nip at the fry so a breeding net or separate tank might be worth having just in case. You could also provide cover at the top of the tank with lots of floating plants which will give the fry somewhere to escape to. The fry are fairly large when born, and therefore small in number. They are reasonably easy to care for and will grow well on brine shrimp and small, crushed flakes. Make sure to give the fish a rest during winter with temperatures lower than 22°C for a few months so they stop producing fry. Though this fish lives in warmer habitats, it does well over the winter when kept cooler. It can be kept down to

temperatures of 18°C with no problems for months. In spring, when the temperature slowly increases, they will start spawning at 23 or 24°C and won't stop until it gets colder again or when it gets too warm (28°C). Overall, this is a really nice species to keep and a great starter fish for those who want to breed *Goodeids*.

The reintroduction of *Skiffia francesae*

By Arely Ramirez-Garcia[1] and Omar Dominguez-Dominguez[2]
Translated from Spanish to French by Fabien Liberge and from French to English by "Google Translate" [with a little help from Greg Roebuck].

Photo 1 Male *Zoogoneticus tequila.* Photo by Luis E. Baltazar

Photo 2 *Notropis amecae.* Photo by Arely Ramírez-García

1.Doctorate in Biology institutional Programme, Michoacan University of St Nicolas of Hidalgo, Morelia, Michoacan, Mexico.
2. Aquatic Biology Laboratory, University of Michoacan, Morelia, Michoacan, Mexico.

The reintroduction of a species is a complex process which must be approached in a pluralistic, multidisciplinary way, including ecological, biological and political points of view but also social aspects. At FishArk, hosted by the Aquatic Biology Laboratory of Michoacan Universtiy we are involved in the conservation of local and endemic species.

Recently, we have successfully reintroduced two extinct species, *Zoogoneticus tequila* and *Notropis amecae*, both from the Ameca basin, and more specifically from the Rio Teuchitlan in the State of Jalisco in Mexico.

The population of *Zoogoneticus tequila* (Photo 1) continues to be monitored by scientists and have we found individuals of this species outside the initial reintroduction zone, which shows us that the population of *Z. tequila* is expanding and is already colonizing the Rio Teuchitlan.

For *Notropis amecae* (Photo 2), it seems that development is slower. The number of individuals is very low, but the species is present, and we hope that this will continue to increase.

Photo 3 Female *Skiffia francesae.* Photo by Arely Ramírez-García

A third species, *Skiffia francesae*, also extinct in the wild, originates from the same place. Fortunately, and thanks to aquarists in the United States and Europe, this species is still kept in captivity. This includes a population conserved by the FishArk which was sent to us by the zoos of Wilhelma, Vienna (Austria) and the North American group of the GWG.

To initiate this work, at the end of 2018, a “semi-natural” basin was created in the botanical garden of the Michoacan University of St Nicolas of Hidalgo. In November 2019, sixty *Skiffia francesae* were introduced into this “natural” basin (Photo 4). In 2020 and despite the general restrictions linked to the Covid-19 pandemic which began in Morelia in February 2020,we have tried not to stop our conservation projects.

Thus, in August 2020, we began field studies in the botanical garden by following the government’s health recommendations (photo5). We have started monitoring the population in this “rustic” basin. We placed 25 fish traps all around the pond. The traps were arranged at random on the surface and at the bottom, and six were placed in the middle of the basin held in place by a rope which crossed the basin right through (photo6). The traps were placed from 7.00am to 7.00pm and checked every two hours. The captured specimens were collected in a 1000 litre tank placed at the edge of the basin and whose water was continuously renewed with water from the basin 9in order to prevent several successive captures of the same individual (photo7). All the fish were returned to the pond at the end of the study day and all were measured and weighed.

During the first day of the survey, 20 males and 20 females were caught and these fish were used to determine the list of specific prey and the number of organisms necessary to ensure the trophic and reproductive needs of the species during the following twelve months. This assessment showed that 13 females and 16 males were needed to obtain the trophic and reproductive data. From August 2020 to March 2021, the population of *Skiffia francesae* was monitored monthly to determine its evolution from the point of view of food and reproductive parameters. We will continue until August 2021 to achieve a full cycle of one year.

The environmental parameters of the “natural” basin have made it possible to define the favourable conditions for the good development and coexistence of *Skiffia francesae*. Measurements showed a temperature ranging from 21°C in August to 18°C in December. The pH showed slightly alkaline water (from 6.8 in September to 8.2 in December). Dissolved oxygen ranged from 6.5mg/litre in August to 8.36mg/litre in December. Dissolved solids ranged from 97mg/litre in November to 113mg/litre in August, indicating that the basin contained dissolved minerals and organic salts.

The population of *S. francesae* is increasing one year after its introduction into this “natural” pond. In August 2020 we had captured 43 individuals and in the months that followed the number of individuals increased. In November, 905 specimens were captured, 850 in December, 1000 in January 2021, 1158 in February, 1355 in March, 1369 in April and 1423 in May.

Photo 4: The natural pond at the St Nicolas University of Hidalgo. Photo : *Luis E. Baltazar*

Photo 5: Students participating in fieldwork. Photo : *Arely Ramirez Garcia*

Photo 6 : A fish trap. Photo : *Arely Ramirez-Garcia*

Photo 7: The 1000litre tank placed at the edge of the natural pond in order to keep the captured specimens. Photo : *Arely Ramirez-Garcia*.

Photo 8 : Measurement of the physical and chemical parameters and collection of the traps placed in the middle of the pond and held in place by a rope across the pond. Photo : *Arely Ramirez-Garcia*.

Skiffia francesae in the pond feeds on 10 different food items, the main ones being microalgae, rotifers and mosquito larvae (Chironomidae). The sex ratio is balanced, one male to one female (1:1). Both sexes are capable of breeding from a similar size of around 26 – 27 mm. Both sexes show a positive allometric growth which tends to indicate that the fish grom more in height than in length (they are more robust than long). The fertility rate goes from 6 to 14 embryos per female with an average of 11. Concerning parasites, for the moment, in the pond we have observed only one nematode (worm) – a species of the genus *Spiroxis* (Photo 10).

We will continue to monitor this population in the botanical gardin pond in order to learn more about the living conditions in semi-captivity. We also have pools in Teuchitlan in which around 250 *S. francesae* were placed in January 2021 after being marked with injections of coloured polymer (Photo 11).

In April 2021 we reintroduced these marked *Skiffias*, which do not carry parasites, into the spring at Teuchitlan (Photo 12). Children and adults from Teuchitlan town participated in this important momen of the first return of *Skiffia francesae* to its natural habitat (Photo 13).

To go further, we have planned to reintroduce at least 300 specimens every three months in the springs at Teuchitlan. At each release we will mark all the individuals with a different colour and thus we will be able to identify from when the fish have been released. We also plan to follow the biological and ecological parameters of the released specimens in the same way as those of the specimens from the pond in the botanical gardens as well as any other environmental parameters which could be important to analyse the reintroduction process. We will also continue to monitore the populations of *Zoogoneticus tequila* and *Notropis amecae* in Teuchitlan. At each new visit to the site we will mark the *Zoogoneticus* that we find to know if these fish move from one place to another in the river and try to have a more precise

estimate of the size of the population based on the numbers of captures and recaptures.

At the same time, we will continue the environmental education programme which involves strengthening the acceptance by the local inhabitants of the reintroduction project. Meetings were held with the “Guardians of the River” (Photo 14), a motivated and enthusiastic group for the conservation and protection of species and their environment. We have worked together to prepare activities for 2021 and 2022. This group is doing important work to improve the consideration by local populations and tourists who visit the site to keep the Rio Teuchitlan clean. The reintroduction efforts of *Zoogoneticus tequila, Notropis amecae* and *Skiffia francesae* are also brought to the public’s attention through lectures which highlight the importance of keeping the river healthy to protect these endemic fish (Photo15).

We also plan to continue to control invasive alien species in the springs of Teuchitlan.

Photo 9.- Microalgue, genus *Pleurotaenium* (a) [above] and Chironomidae (b) [below] found in the stomach of *Skiffia francesae*. Photos Arely Ramírez-García

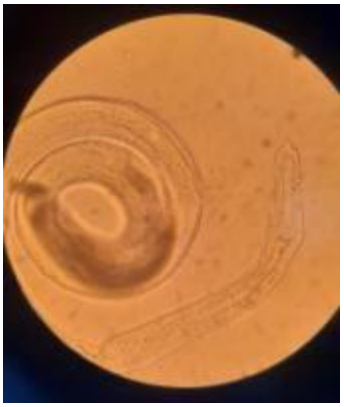


Photo 10 [Left].- *Spiroxis* sp, le sole parasite found hosted by *Skiffia francesae* in the natural pond.
Photo Arely Ramírez-García

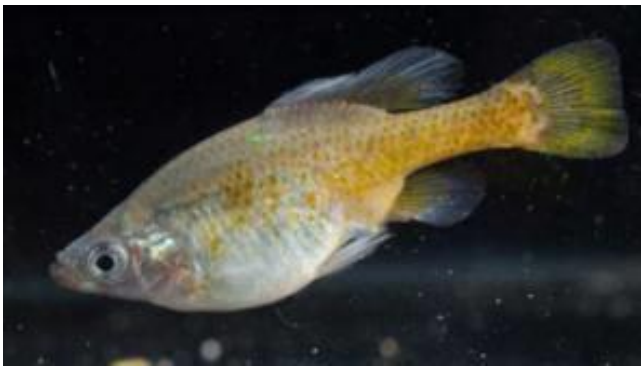


Photo 11.- Fish marked With a fluorescent green polymer (note the small green dot on the back of the fish).
Photo Luis E. Baltazar.

We are continuing our work on this fantastic project and without the help of motivated students, researchers, aquarists, Zoos, associations and “River guardians” this project simply would not exist. Special thanks to the American Livebearer Association, Wilhelma Zoo, Chester Zoo, Goodeid Working Group, Beauval Zoo and Ostrava Zoo.

We invite you to visit our web pages where you will find more information, the latest actions, other projects that our laboratory leads and photographs of our sites and teams. We hope we will be able very quickly to say “*Skiffia francesae* is back in the wild and fully recovered”.

Advances in the *Zoogoneticus tequila* and *Skiffia francesae* conservation program

#ProyectoTeuchitlán

2021 is almost over and activities on the Teuchitlan River have ended for this year, with very good news for members, students and all followers of the "J Aquatic Biology Lab. Javier Alvarado Díaz" about this conservation program.

Last week we returned to the release site of *Zoogoneticus tequila* to monitor the reintroduced population, as well as to make water quality rigor measurements and see the general state of the site's ichthyofauna. We also implemented new protocols in the French *Skiffia* reintroduction project and saw the progress of the population we released in September within the Centro Universitario de los Valles facilities.

In order not to extend too much, we've prepared a small summary of the highlights on our latest visit:

1. The population of *Zoogoneticus tequila* at the release site is perfectly found and remains stable. The most exciting thing was finding, approximately 1.5 km from the original reintroduction zone, a small and healthy population of *Zoogoneticus tequila* (between 80 and 100 individuals). This means that the reintroduced population has not only adapted well to the original area, but has moved along the river and has thrived, spreading and colonizing new areas within the same basin. We're thinking of protocols to monitor this new found population and closely follow its evolution in the area (Eye here interested in making thesis with us, send us a private message).
2. Fun fact: A snake was caught in one of our traps. Our staff qualified the sack and were checked to be in good condition to be later released in the area.
3. Mesocosmos were deployed to monitor the population of French *Skiffia* to release into the river. These mesocosmos will give us a better idea of how the species behaves in the wild in different river conditions in a controlled way.
4. Our collaborators and friends of @TAG, who also took part in the Teuchitlán River fish conservation program, share with us some amazing photographs of *Skiffia francesae* specimens, these bodies form part of a population established in semi-captive conditions in their facilities. You can tell in the photos, that this population is staying healthy and growing, another amazing news for everyone.

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Visit the Faculty of Biology page to which we belong:
http://bios.biologia.umich.mx/
Immerse yourself in the knowledge.


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Snippets

Zoogoneticus tequila is quite popular at the moment but what about the other members of the genus? In the past I have kept a species which at the time I thought was *Z. quitzeoensis* but it now seems is actually *Z. purhepechus*. These two look very similar – so what is the difference? A research paper has been published summarising the research into DNA and identification of *Z. purhepechus.* The paper can be found at :-

https://www.researchgate.net/publication/239567344_Morphological_and_genetic_comparative_analyses_of_populations_of_Zoogoneticus_quitzeoensis_CyprinodontiformesGoodeidae_from_Central_Mexico_with_description_of_a_new_species_Analisis_comparativo_morfol/link/5a870cffaca272017e5aadcc/download

Another research paper :-
Predation adaption in Gambusia https://www.nature.com/articles/s41437-021-00487-w?utm_source=hdy_etoc&utm_medium=email&utm_campaign=toc_41437_128_1&utm_content=20220118

Zoogoneticus tequila made the news! The article below was taken from "*The Times*", Thursday December 30th, 2021. A similar article also appeared in "*The Guardian*".

A shot of tequila fish from Chester brings joy to Mexican river

Emma Yeomans

A fish that became extinct in Mexico has been reintroduced to the wild with the help of a British zoo.

The tequila fish, which grows no longer than 70mm, disappeared completely from the wild in 2003 after the introduction of invasive fish species and increasing water pollution. But more than 1,500 of them have now been returned to the Teuchitlan River, in the state of Jalisco in southwest Mexico, thanks to conservationists from Chester Zoo and the Michoacana University of Mexico.

Professor Omar Dominguez, from the university, said: "The tequila splitfin has, for many years, been used by scientists to study the evolution, biogeography and live bearing reproduction techniques of fishes and is a very important species. We could not stand back and allow it to disappear." He added that reintroducing the fish had been beneficial to the environment. "The springs are now healthy and the community that lives around them can now enjoy this beautiful place again, along with all of the benefits that a healthy freshwater habitat brings.

"Meanwhile, local people, particularly school-children, are fully embracing an education programme which is changing the way that many act towards the freshwater environment that surrounds them."

The tequila fish had been extinct in the Mexican wild

The project started in 1998 when the university received five pairs of the fish from Chester Zoo and founded a new colony in a laboratory.

Experts expanded the fish population for the next 15 years, until 40 pairs were released into artificial ponds at the university. In four years their population had grown to 10,000 fish and the pond colony became the source for releasing the fish into the wild.

Dr Gerardo Garcia, a curator at Chester Zoo, said: "It is a real privilege to have helped save this charismatic little fish and it just goes to show that with the skill and expertise of conservationists, and with local communities fully invested in a reintroduction project, species can make a comeback from environments where they were once lost."

He said: "This is a rare success story. We now have a blueprint for what works and already we're onto the next one — a rescue mission for the golden skiffia."

Guppies: Prey or Predators? *By Clive Walker and Bill Galbally*

From Clive Walker :-
I have a large number of Bristol Guppies in most of my tanks. Sometime ago I started to wonder if their presence was affecting fry numbers from my *X. xiphidium*. I wasn't getting many fry although numbers were increasing slowly.

I cleared all the guppies from a tank and introduced five male and three female *xiphidium.* This left a similar number of *xiphidium* in the original tank, I also reduced the number of guppies in that tank leaving between 20-30 of various ages.

That was several months ago. There are now around 25-30 young *xiphidium* in the guppy free tank and 10-15 in the tank shared with guppies.

Not exactly scientific research. The next question is why?
I speculate that the adult guppies could be attacking the fry of other species, thus improving the survival chances of their offspring.

My good friend Bill Galballey has suggested that the guppies are out-competing the fry from other species. His ideas are to follow.

From Bill Galbally :-
Firstly: my breeding conditions.
I never separate out my fry from the adults. They have to "sink or swim" in the same tank. I don't feed brine shrimp either - main feed is flake food - crushed to a dust for fry. Tanks are heavily planted and 3 cm of gravel. Lots of snails.

I too have found that Xiphophorus fry do not do well in tanks with guppies. **This is the main point.**
However - I have kept guppies and Xiphophorus together in the same tanks since 1968 and I have NEVER seen a single instance of aggression by an adult guppy on Xiphophorus fry. But it could still be a possibility.
My theory is that the guppies have been in domestication for over a hundred years and are now well suited to tank conditions. Or that guppies are naturally suited to tank conditions in the case of more recent collections. Therefore, their fry out-compete the fry of the very similar *Xiphophorus.* As *Xiphophorus* are generally bigger at birth - this is counter-intuitive. But - there will be guppy fry in the tank that are already a few weeks old and I think this is where the competition lies.
It could also be that guppies carry disease or parasites that they are immune to but the *Xiphophorus* are not.
As an aside, I have had guppies and *Xiphophorus helleri* (Yucatan green swords) together in a 4ft tank for more than 20 years and they are still both going strong. In this tank, neither species seems to affect the other.
Also - I have put some guppy fry in with my *X. alvarezi* as fry numbers were low and the guppies act as "dither fish" encouraging the *X. alvarezi* fry to feed.
I find that guppies do not need as frequent a water change as do *Xiphophorous* - which might be why they can out-compete the *Xiphophorus* - as it is fry that are most vulnerable to water quality as it affects growth in the initial stages. My water-changing is less frequent than I would like it to be. Tanks with *Xiphophorus* get

water changed about 4 times more frequently than do tanks with just guppies - but it may be that is still not enough? I got some *X. montezumae* from Pont L'eveque in France from a breeder that was inundated with them. When I asked his secret (via a translator) he told me it was 100% water changes every week! He had so many he was selling his fish (he had about 50 for sale) for €1 each!
I would be very interested to learn if anyone else has other theories or experiences?

From Chester Zoo

Hi, is anyone after some Xenotoca doadrioi "San Marcos"? We have around 500-550 surplus. mixed ages.

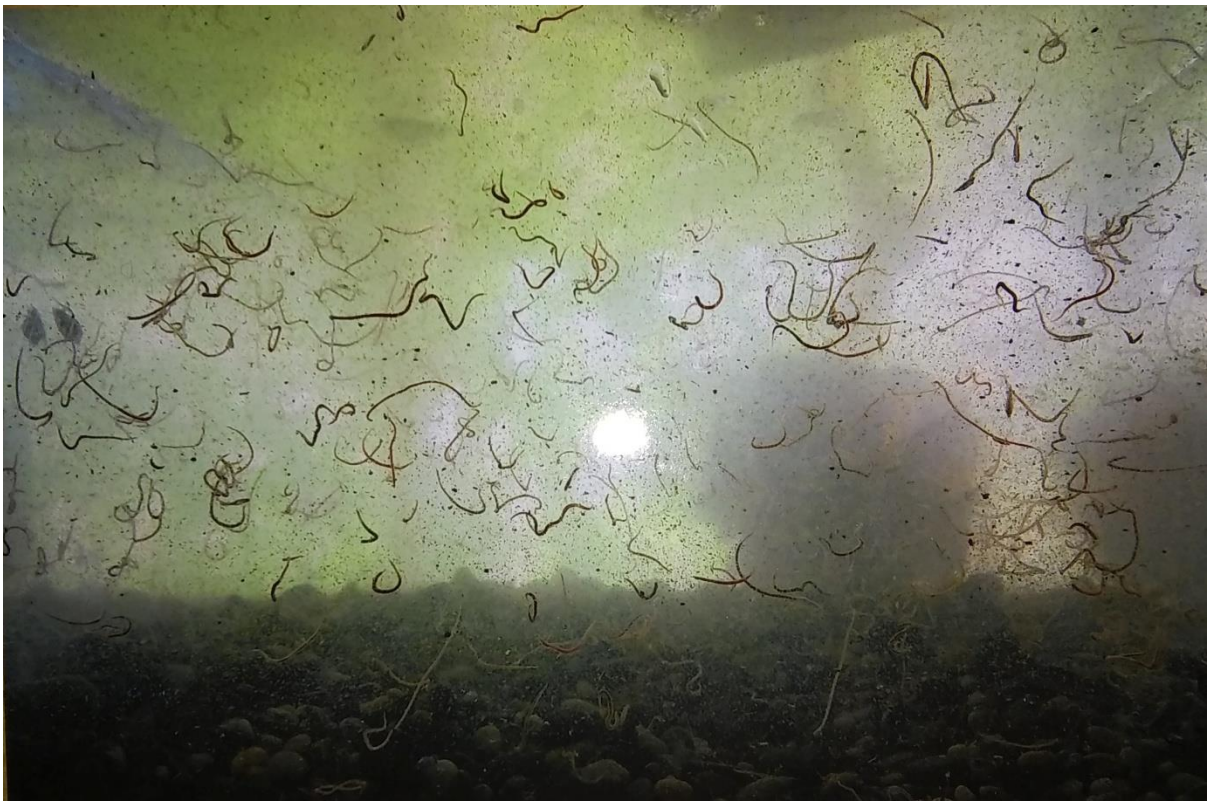
We are able to re-home to members of the GWG but there are a few forms etc. that need to be completed.

Email h.thomas@chesterzoo.org or b.goodwin@chesterzoo.org if you are interested.

Keeping Blackworms *By Alan Rothwell*
I decided to have a go at keeping and reproducing blackworms. So I first read up on how other folks were doing it; always a good idea. I set up an 18x12x8 inch tank in which I put a large sponge filter, a couple of inches of gravel and filled it with rainwater. I let it run for a few weeks and then bought six bags of blackworms from Aqualife [Leyland, Lancashire] and put them in. I read about all sorts of food you could feed them but I have had the most success with algae tablets which were recommended by a friend. From what I had read, blackworms, although they are hermaphrodites, they do not reach sexual maturity in captivity. So once a fortnight you stir up the gravel which cuts them up and they all grow up into new blackworms. It is recommended that you change half the water every two weeks with fresh rain-water; do not use tapwater. No-where that I had read did it tell you how to get the blackworms out of the tank and I was thinking of all sorts of ideas when a friend said “its easy you suck them out with a turkey baster”. So if you have a spare tank give it a go. I think the photos prove it can be done and it is good live food.

Reproducing Dero worms *BY Alan Rothwell*
Up until a year ago I had never even heard of Dero worms but when I went to the first table sales auction at Littleborough last year there was a gent selling cultures of them at ten pounds a go. This consisted of a small food container a piece of fine filter foam and a starter culture of Dero worms about the size of my little finger nail. To look at them you would swear they were tubifex worms but are very much smaller and are an ideal food for growing on fry. In the sixty years I have been keeping tropical fish I have never come across anything that grows fish on or brings them into breeding condition better than tubifex, although a good friend of mine tells me blackworms are as good. Well, Dero worms seem to do the same for fry.
Anyway, I keep mine in a large maggot box 6x6x3 inches. In this is a piece of fine foam with a gap all round; 1or1and a half inches is fine. Boiled water is poured in at room temperature up to the top of the foam but not overflowing it. In the middle of this I put a small amount of ground up “Readybrek”; do not over-feed. I would

imagine there are several things you can feed them on but this works for me. Incidentally, I know another man who was keeping them but he used tap-water and the Dero worms died. It takes a bit of patience and time to build your stock up but it is well worth it. I change the water every other day by grabbing the foam and letting the water drain away into a container The old water will contain infusoria which you can feed your fry. Then top up with more boiled water and a little more food. It is recommended that the darker the better so I used a permanent black marker pen to cover the top of the box. The main worry is with such a small amount of water it goes off very fast so you have to keep on top of it or you lose them.



Blackworms, a photo of a photo supplied by *Alan Rothwell*

Alan’s blackworm set-up. A photo of a photo supplied by *Alan Rothwell*.

Dero worms. A photo of a photo by *Alan Rothwell*.

Alan's Dero worm set-up. A photo of a photo by *Alan Rothwell*

Wanted

BLA member J. Sara Fulton would like to get hold of a male *Gambusia vittata*. She has females but no male. Can anybody out there help her out. Her email address is :-

jsarafulton@virginmedia.com

Has anyone got a male nezzie, *Xiphophorus nezahualcoyotl*, the I could buy from them. I got about twenty fry last year that I have raised to adulthood but none of them have sexed out as male. My email address is :-
jrsrr12@gmail.com

Limia sp “Tiger”. Photo : *J. Sara Fulton*

Heterandria Formosa Photo : *J. Sara Fulton*

Diary dates

BLA Shows (Provisional bookings)

Spring Show 24th April 2022

The Braunston WMC,

Braunstone Close, Braunstone Town,

Leicester LE3 2GE

Summer show 26th June 2022 (Provisional)

Kempshott Village Hall, Basingstoke

Convention 17th – 18th September 2022 (Provisional)
Holiday Inn, South Normanton, Derbyshire

Preston and District Aquarist Society

Auctions at :-

Farrington Conservative Club
70 Stanfield Lane,
Leyland
PR25 4GA

Sunday 13th March

Sunday 22nd May

Sunday 25th September

Sunday 13th November

Further details from the Club Secretary, Mr Elliot Garstang, on 07562 981321

The American Livebearer Association are having their convention as a joint event with the American Killifish Association, the American Cichlid Association and the Australia New Guinea Fishes Association in Louisville, Kentucky from the 27th to the 31st July 2022.

If anyone from the BLA goes to this event I would love to hear about it. It would be great to be able to include a report about such an event in the autumn newsletter.