

# Livebearer News

Official Members Magazine of the  
BRITISH LIVEBEARER ASSOCIATION



Issue 71

September

2022

## CONTENTS

- Page 1** : Front cover  
**Page 2** : Contents, Data Protection Act, Committee.  
**Page 3** : Editorial  
**Pages 4 - 6** : Photos of *John Becket's* tank for keeping *Neoheterandria elegans*.  
**Pages 7 - 10** : Photos from *J. Sara Fulton*  
**Pages 11 - 12** : A conversation with Becky Goodwin  
**Pages 12 - 15** : Endler's guppy, or, will we ever learn? By Fred Poeser  
**Page 16** : The *Skiffia* re-introduction project.  
**Pages 17 - 22** : *Xiphophorus* in Europe. By *Kees de Jong*.  
**Pages 23 - 24** : Snippets  
**Pages 25 - 38** : Two meetings and a visit. By *Greg Roebuck*  
**Pages 39 - 50** : *Characodon* : Chaos and Confusion. By *Michael Koeck*  
**Page 51** : Regarding *Allotoca* : Advice from *Jože Vrbančič*  
**Page 52** : Diary dates – the big one ! The Fishkeeping Extravaganza

### 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.

#### Committee

**Chairman** : Steve Oliver; email [steven.oliver\\_feoc@yahoo.co.uk](mailto:steven.oliver_feoc@yahoo.co.uk)

**Vice Chairman** : John Fish; email [fish0116@live.com](mailto:fish0116@live.com)

**Treasurer** : Kamil Gradzewicz; email [kamilgradzewicz@gmail.com](mailto:kamilgradzewicz@gmail.com)

**Editor** : Greg Roebuck, email [gjrsr12@gmail.com](mailto:gjrsr12@gmail.com)

**Events organisers** : Steve Oliver; email [steven.oliver\\_feoc@yahoo.co.uk](mailto:steven.oliver_feoc@yahoo.co.uk); John Fish; email [fish0116@live.com](mailto:fish0116@live.com) and Clive Walker; email [clivewalker076@gmail.com](mailto:clivewalker076@gmail.com)

**Webmaster** : Alan Dunne, email [helter-skelter@livingfish.co.uk](mailto:helter-skelter@livingfish.co.uk)

**Species maintenance** : Paddy Davies; email [paddyd@googlemail.com](mailto:paddyd@googlemail.com) and Holly Walford

**Committee members** : Clive Walker; Bill Galbally; Peter Ellis and Holly Walford

## Editorial

Lots of “thank-you’s” to start off with. Thank you to John Becket for sending me the photos of his set-up for keeping *Neoheterandria elegans* and to Sara Fulton for sending me the photos of the killifish and her tanks that she uses to keep the killies and livebearers. Many thanks to Becky Goodwin of Chester Zoo aquarium for the large number of *Xenotoca doadrioi* that she donated to BLA members and the advice regarding water quality and mineral content in the conversation that I had with her. Many thanks to Fred Poeser for his article about Endler’s guppies and to Nigel Hunter for passing the article to me and also the one about the re-introduction of *Skiffia francesae* into the Rio Teuchitlan. Speaking of which, many apologies to the original author of that article as I didn’t write it down at the time I received it and now I don’t remember who to credit. Big thanks to Kees de Jong for his article about the work that has been done by the members of the Xiphophorus Working Group in collecting and collating the information about which species and forms are being kept in Europe. More on that in future. Extra thanks for taking the time to email me the photos with the article. Thanks too to our own Holly Walford for emailing me the photos of the *Characodon lateralis* fry. Thanks also to Jože Vrbančič of Slovenia for his advice to me about keeping *Allotoca zacapuensis* and other *Allotoca* species.

Biggest thanks of all must go to Michael Kock. Not just for his article about *Characodon* but also for organizing and hosting the meeting of the Goodeid Working Group that I attended. Michael is also an excellent speaker and he will be giving a talk at the Fishkeeping Extravaganza later this month. Last year’s Extravaganza was brilliant and I expect this year’s to be just as good. See you there!

**My tank for keeping *Neoheterandria elegans***     By John Becket

After an exchange of emails with new(ish) BLA member John Becket, he very kindly sent me the photos of his set-up for keeping the tiger teddy, *Neoheterandria elegans*. Impressive photos of an impressive tank. Thanks John!



John Becket's *Neoheterandria elegans* species tank.

Photo : John Becket



John tells me that he does a 10% water change weekly.

*Photo : John Becket*





*Photos : John Becket*

OK so not a livebearer but nice photos anyway! Photos from J. Sara Fulton.











Sara's tanks containing livebearers and killifish. Photo :- *J. Sara Fulton*

## A conversation with Becky Goodwin

In late June I had occasion to phone Becky Goodwin, who is the lead aquarist at Chester Zoo aquarium. After all the details of how and when I would collect fish from her – [Chester Zoo had a surplus of *Xenotoca doadrioi* and, rather than euthanize them, was willing for them to go to members of the Goodeid Working Group] – the conversation got around to water quality. Now the quality of what comes out of the tap is one of my “things”. Long-time BLA member and highly experienced aquarist Alan Rothwell lost all his fish when his local water supplier added a chemical to the supply that was lethal to fish but would take no responsibility saying only “we supply water suitable for humans to drink”. Other BLA members have similar, if not quite so drastic, stories.

Becky supplied an article for the September 2020 issue of “Livebearer News” detailing the additives that are used to make the water supplied in the Chester area suitable for keeping Goodeids. [If you would like me to email you the September 2020 newsletter just let me know and I will.] During our conversation the following points emerged :-

1. Several months ago there was a small, subtle, change to the mineral composition of the water supplied to Chester Zoo. Even this small change had an effect – some species of the fish they keep just stopped breeding.

2. Chester zoo maintains the species *Allotoca zacapuensis*. This is a species that I am familiar with. I bought some at a BLA auction and kept them going for several years but after three generations they just stopped breeding for me. When Chester Zoo first had them they had problems. There were few fry and the fry that they did get had deformities and had to be euthanased. When Chester Zoo aquarium started to use water with the mineral additives so that it resembled Lake Patzcuaro (with a high carbonate and hydrogencarbonate content) the fish bred much better and are now they have a healthy population.

3. Chester Zoo have been keeping and breeding *Zoogoneticus tequila* and *Ameca splendens* for many years but show much better colour and general health now that the water resembling Lake Patzcuaro is used.

4. Water hardness; i.e. the level of dissolved calcium and magnesium compounds in the water. Some species of fish are happy in water of any hardness – others not so happy. As a very general rule, if the water is too hard the fish are often lethargic and reluctant to breed. If the water is not hard enough then when the fish do breed there are lots of fry with deformities.

5. The staff at Chester Zoo aquarium had tank water tested professionally and the levels of different minerals measured. The tests were repeated after some time and the levels of some key minerals had gone down. The interesting point was that the levels of the minerals had gone down more in the tanks with lots of fish. This suggests that some minerals are absorbed directly from the water by the fish.

And the lessons for us, non-professional fish-keepers? If a species of livebearer, especially a *Goodeid*, is not breeding when you would expect it to, test the hardness of the water and try to modify it, if need be. If anyone does try making up the water used for water changes in the way that Becky described in 2020 will they please let us know how they are getting on.

P.S. Our own Nigel Hunter lives in an area where the tap water is very hard, virtually liquid chalk, and he seems to be able to breed any *Goodeid* that he gets hold of. Maybe that is a lesson to the rest of us?

## Assessing Endler's Guppy, or: will we ever learn?

By Fred Poeser

2022, it is nearly 20 years now since Michael Kempkes and I went to Venezuela to look what was going on with the mysterious "Endler's Guppy". We went and did some serious data collecting, which resulted in our 2005 paper in which we described *Poecilia wingei* together with Dr Isaac Isbrücker from the Zoological Museum in Amsterdam. Not much has changed since, except that the Zoological Museum is no more (all material is in Leiden now). The controversy about *P. wingei* is still ongoing, although on a smaller scale: the question is no longer "to be or not to be *P. wingei*", it has changed into a "who is who in guppy world". This calls for another round of data collecting...

Michael and I went to the Paría Peninsula in our attempt to find the illusive new strain/variation/species... Already in the mid 90's of last century (which sounds longer ago than it actually is) the discussions about this guppy was happening in 'Poecilia Nederland' and I started to examine (dead) museum material to investigate the different populations of guppies, all called *P. reticulata* back then. All to no avail, there was simply no clear morphological or anatomical difference. Same fin-ray counts, same scale counts, same shape of the gonopodium, same everything. Same doesn't mean 'identical', but without a good assessment of the variation in all these characteristics, and their causes, there was no telling if there was a difference to tell the (hypothetical) species apart. That's what I say: little has changed.

The best evidence that the two guppy species are separate natural groups was provided in the description of the third species (*P. obscura* from eastern Trinidad), which was based on mitochondrial DNA. Unfortunately, that information is, obviously, not available for the different populations that we have to deal with. It is even worse than that, mDNA cannot tell the difference between a species or a hybrid of this species and another. It is public knowledge that all guppy species hybridise with pleasure, not only in our aquariums but also frequently in nature (now that we, *Homo sapiens*, disturb their natural habitats and also artificially transport guppies from (home) localities to other places). As far as I know, pure *P. wingei* originate from the



Paría Peninsula, separated from *P. reticulata* (in the Río Orinoco drainage) by a mountainous range. That is where Michael and I got our (circumstantial) evidence from: the populations closest to these Cordilleras showed the famous black comma beneath the dorsal-fin and the ones closest to the coast had the 'normal' guppy spots. The biological explanation for this difference between the 'Campoma population' (the ones with the comma spots, near the Cordilleras) and the 'Carupano population' is that the black patch is a clear signal to the *P. wingei* females that the machos that show this spot are of the same species (not to be confused by the occasional *P. reticulata* male). In the coastal areas there is little to no change of encountering a *P. reticulata* male (well, that was in the good old days before *H. sapiens* helped the fish to travel, Michael and I even found a *P. latipinna* population near the coast on one of our expeditions!), and these males are spotted 'normally'.

So, why did Michael and I go to the Paría Peninsula in the first place? Weren't the first 'Endler's Guppies' found in Cumana, a little under 100km from Campoma? Well, we knew that several scientists had already visited the place and came up with nothing. Mind you, the scientists that I speak of were not the least ones, e.g., Ms Alexander and Mr Breden (2004; see figure 1), not to mention Mr Endler himself! The story of the latter is well-known (I think): he collected the guppies somewhere in the 70's in the famous 'Laguna de los patos' and send them to different taxonomists to determine whether this was a new species or not. Unfortunately, nobody came to any conclusion and the mystery of 'the Endler Guppy' was born. And here we are, in 2002, when Michael and I were going to solve the puzzle. Obviously, going to Cumana like all the others was no option, what would we find that nobody else has found before us? So we decided to go somewhere else...

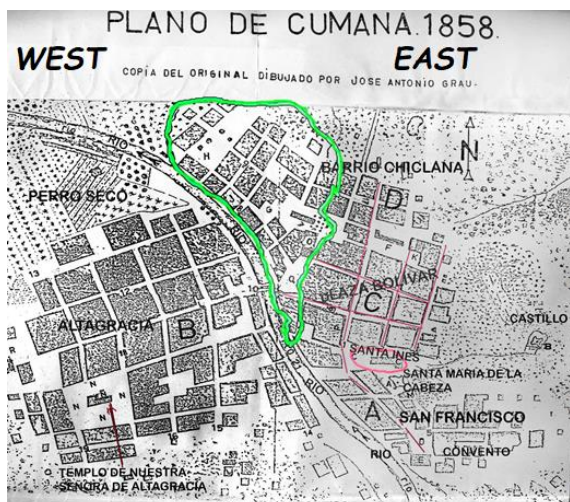


Figure 1. Alexander and Breden (2004): "Cumana' is bisected by the Rio Manzanares. Three populations were sampled on the western side of this river [Central Cumana' (CC), Central Cumana' East (CCE) and West Cumana' (WC)], and two on the eastern side, [Calle Caripe (CCAR) and Calle Margarita (CMARG)]." The map is from the Internet, the text is from a scientific publication that teaches us that *P. reticulata* is found on 'the east side of town' and *P. wingei* on the west side of town.

After an acclimation day or so, we set off to a small pension near Cariaco and arranged transport. Our first stop was a bridge in the Campoma swamps... where we immediately struck gold! (Figure 2)



Figure 2. A magic moment: me using the dipnet to catch the first ever Campoma Guppy!

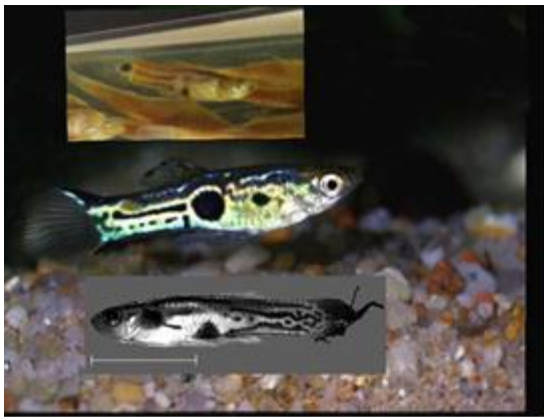
That was no stroke of luck, the whole area was swamped with (Endler's) guppies. We later discovered that we only needed to cross the road from the pension to catch what we were looking for. What's more, we caught the metallic beauties everywhere we collected on "our side" of the Cordilleras, and every time we crossed the mountains we caught the 'normal' guppies. Together with the observed 'character displacement' (please note the black bar on the guppy from Campoma!), we had our evidence of a different species. So, what about those guppies from Cumana?

As can be seen in figure 1, the river doesn't only divide the city of Cumana, but also separate the two guppy species. Together with the first reports (John Endler apparently found 'his' guppy only near a dump site), we expected that the first population of the Campoma Guppy originated from an emptied aquarium, apparently in the west side of town... if not for an interesting new population that recently started to populate our aquariums. The artificial release of Campoma guppies is what we wrote about in our original description of *P. wingei*, but I now have some (very little) reason to doubt that scenario. In Figure 3, you see a beautiful version of *P. wingei* males, named 'El Tigre'. I didn't think they look very 'tiger-like' and learned that they originate from a town called 'El Tigre', some 400km from Cumana! Their distinct appearance makes me think that this population is a natural, original population, and therefore not from the Paría Peninsula! Could it be that *P. wingei* had a bigger area of distribution and was replaced by *P. reticulata* at some later period?



Figure 3. Some "El Tigre" Endlers. I copied them from the Internet (it was a picture of a YouTube video, I guess that makes it public domain).

In conclusion, two scenarios are proposed in this article. The one that is most probable is that a long, long time ago the Guppy Populations in Venezuela were split in two and the guppies that were stuck on the Paría Peninsula, behind the mountains, developed into a species different from *P. reticulata*. This brilliantly coloured Campoma Guppy was later brought home by somebody to Cumana and, after having bred them in sufficient numbers, some were released in the canals of Cumana where they continued to reproduce. They encountered specimens of *P. reticulata* (figure 4; type material is the material that is used to describe a species, these specimens are the Common Guppy!) and probably hybridised. Scenario 2 could be that the two species lived happily alongside of each other in Venezuela, but after a while *P. reticulata* started to dominate the mainland rivers... except for some dispersed populations, of which the 'El Tigre' population is one. In both cases, there is no way to tell the species, or their hybrids, apart except that the more metallic colours are typical for *P. wingei*. Thanks to the tendency of us to catch pretty little fishes and release them somewhere else, the puzzle that we presented ourselves is now unsolvable. That only leaves one option: simply call them all "guppies" and leave it up to personal taste to call them Ender's or not.



**Figure 4. From top to bottom: type material of *P. reticulata*, a 'Staeck' black Endler Guppy and a more recently preserved Guppy from Caracas (type locality of *P. reticulata*).**

## Literature

ALEXANDER, H. J. & F. BREDEN. 2004. Sexual isolation and extreme morphological divergence in the Cumana' guppy: a possible case of incipient speciation. *Journal for Evolutionary Biology*



## Skiffia re-introduction project

The team at [Laboratorio de Biología Acuática](#) has just announced their project to reintroduce the Golden Skiffia, *Skiffia francesae* is one month away from a full reintroduction into this species natural habitat, specifically the Teuchitlán River in the state of Jalisco, Mexico. [#ProyectoTeuchitlán](#)

Original announcement -

<https://www.facebook.com/AquaLabMorelia/posts/pfbid0tJQZ8cjA4KTbLopc7o8KERZmKYWoMhhG11j4eSW4ufy7RoLh78iTofYq5reFzLgCl>

*Skiffia francesae* has long been considered probably extinct in the wild, originally thought to be only surviving thanks to the efforts of aquarists mainly from Europe and the United States, who have kept and bred specimens in captivity for several decades. More recently, a few relict populations of *Skiffia francesae* have been found on the edges of their former range, in small creeks that were once flowing rivers.

A great introduction to this species from the [Goodeid Working Group](#) can be found here -

<http://www.goodeidworkinggroup.com/skiffia-francesae>

[Laboratorio de Biología Acuática](#), the same project behind the successful reintroduction of the Tequila Splitfin, *Zoogoneticus tequila*, has taken the lead with the process of reintroducing this beautiful goodeid back into the Teuchitlán River. The *Skiffia francesae* reintroduction process is complex and is the result of many years of study that continues, with the aim that the reintroduced population will grow and distribute.

Proyecto FishArk Goodeidae

<https://bioumich.wixsite.com/fisharkgoodeidae>

Many apologies, but I accidentally deleted the author of this report.

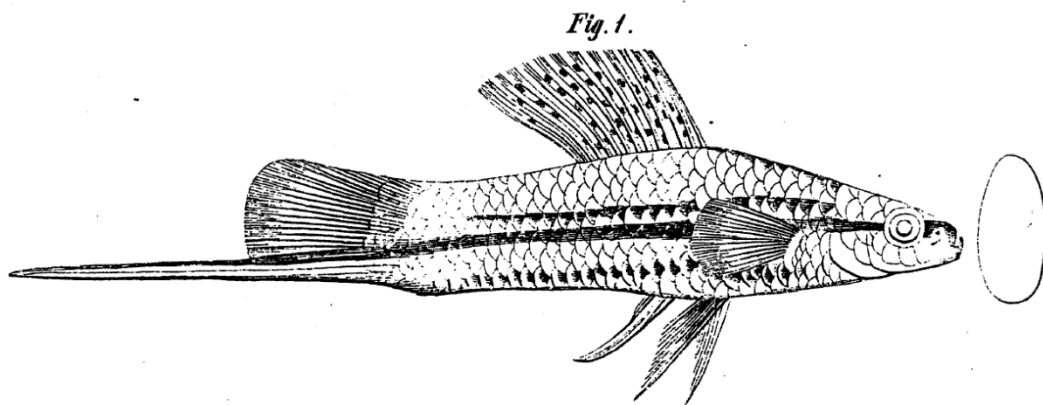


## ***Xiphophorus* in Europe**

*By Kees de Jong*

A couple of years ago Markéta started the project of the Northern Platys. This turned out to be successful. The three species are maintained in aquaria and are doing well. More people get involved, and keeping and breeding them doesn't seem a problem. The number of breeders and fish is increasing.

### ***Xiphophorus hellerii***



In 1848 Heckel described the genus *Xiphophorus*. The first species he described in this paper was *X. hellerii*. So luckily this name that fits the swordtail so well, could stay with the species. The other two species were later renamed to *Poeciliopsis gracilis* and *Pseudoxiphophorus bimaculatus*.

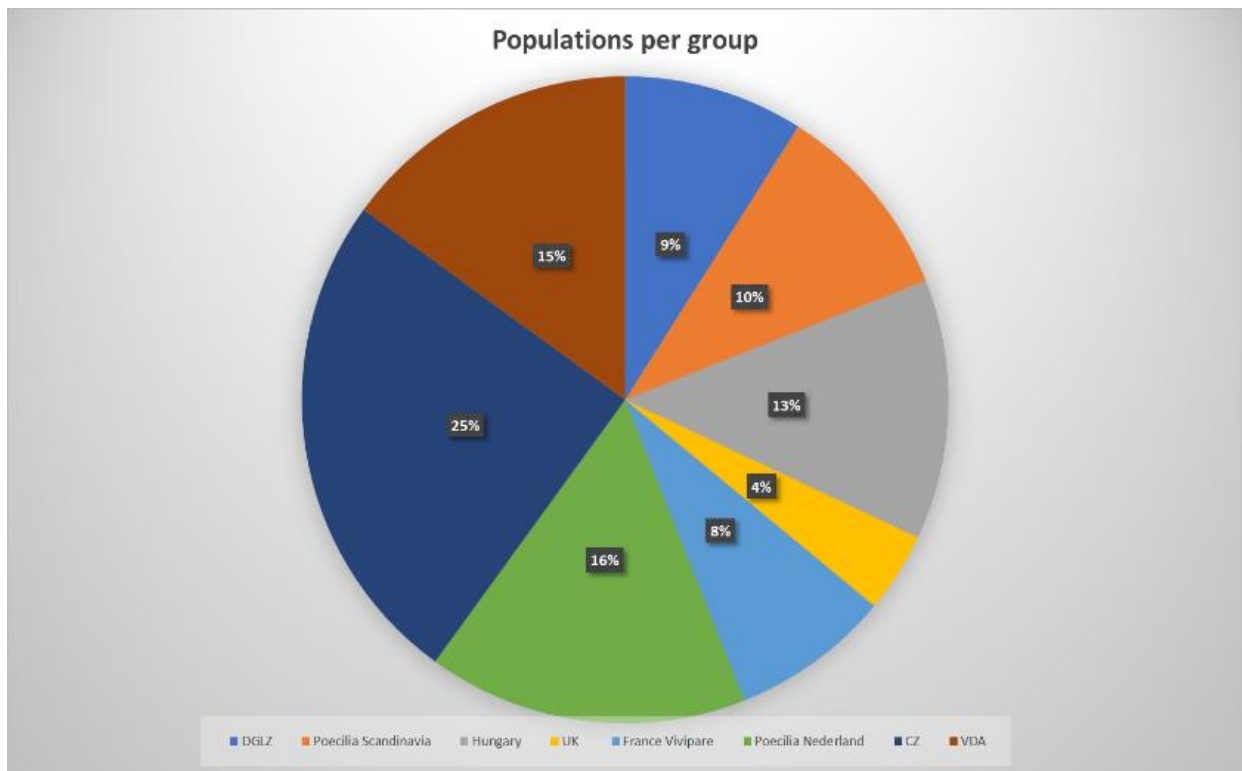
Of course the northern platys are not the only species of the genus *Xiphophorus* that need our attention. More and more species are threatened in the wild. The species with a large natural habitat, like *Xiphophorus hellerii* and *X. maculatus*, might not really need our concern at the moment. But things can change if some new species are described from the large area where they live. Other species that inhabit a restricted area are considered vulnerable at least. **At the combined GWG and XWG meeting in Ostrava in 2021 we concluded that it is necessary to get an overview of the species and populations that we keep in Europe before we take further steps. In this article I give an overview of the results of the inventory that we kept.**

To maintain the information I contacted several organizations and people around Europe. I got information from the **Czech Republic, DGLZ, France Vivipare, Hungary, Poecilia Nederland, Poecilia Scandinavia, and the VDA**. I would like to thank them for their cooperation in this project. All the data we got and used are anonymous. It is not possible to trace the names or other information of the breeders.

The quality of the data is not certain. It is not sure if all the data are still correct. It seems that not all the lists are updated on a regular base. **The names of the populations have a lot of diversity.** Sometimes it is easy to get the right name back, but this is not always the case. It also depends on the details that are kept in the population name. Sometimes also the year of collection, the collecting party and more details on the location than just the name is mentioned. But this is not always the case. Some species are known from only one location but in the lists you can find some variety. I have not taken the liberty to combine a lot of locations.

Beside the natural forms there are also a lot of cultivated ones that have their origin in *Xiphophorus*. They are not included in this list. Preserving those fish is a different project. Conservation of breeding forms is a neglected issue. If you compare this with other domesticated animals, fish lovers seem to neglect this subject. But let us first make sure that we do what we can on the wild form.

In the pie chart below you can see the distribution of the species with location (breeding units) per group. It doesn't say anything about the amount of people that keep the fish. Some people might have a lot of breeding units and other only one. In



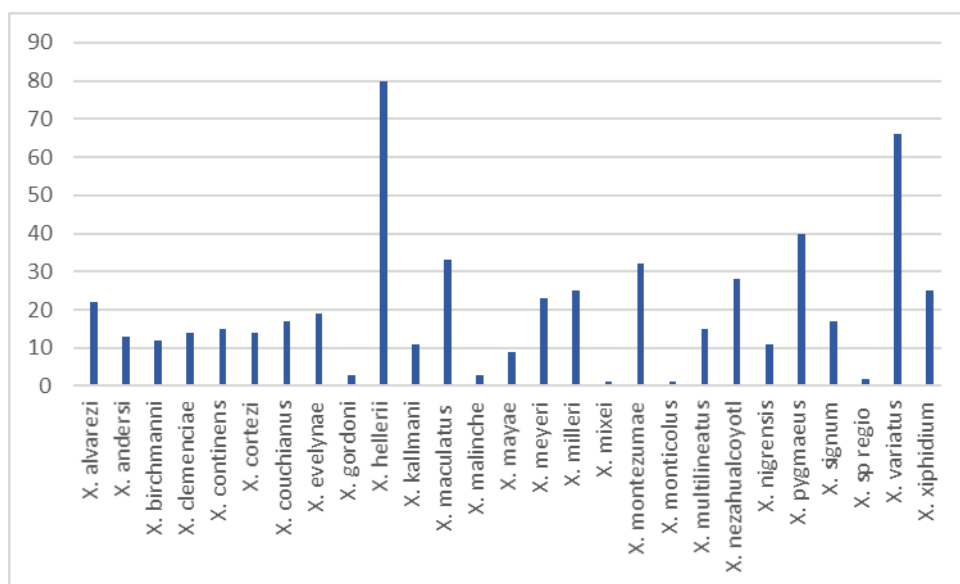
total there are 551 breeding units kept.

. **Strain = a species with a location**

**Breeding unit = one strain kept by one breeder**

In the graphic below you can see the amount of breeding strains per species. As you might expect most breeding units are kept of the green swordtail (*X. hellerii*). The most popular population is the red Yucatan population. The variable platy (*X. variatus*) is second with most popular populations La Laguna and Tampico.

Other species are not kept that often. According to the registration there are only a few people who maintain the threatened *X. gordonii*. The in 2004 described *X. mixei* and *X. monticolus* have not been imported often, which may be the reason that hardly anyone is breeding them. Although this is not the case with *X. malinche*, this species is neither kept by many breeders. Would the fact that this species needs a low temperature makes is so difficult to maintain? Maybe keeping the species outdoor during the summer is a solution? *X. sp. regio* might not be a real species. I don't have enough information on the status of this fish to make some remarks.



**Overall it looks like we are maintaining most of the *Xiphophorus* species in Europe.** Some breeding units have been in the hobby for years and seem to adapt very well. Other ones are new and time will tell if they will stay in the aquarium for a long time.

## Discussion

There are several things that we should discuss in the XWG. I mention a few to start the discussion:

- Are we going to propose a way to describe the location? I know this has been a subject for discussions a lot of time already.
- How far do we want to go with exchanging fish? Are we going to use ESU's like the GWG does?
- Should we try to get more breeders for some of the species that are only maintained by a few members? These are also species that have a small habitat and might be considered at least vulnerable. Maybe do it in the same way as with the Northern Platy's? Who is going to do it?
- It would be helpful if we could get a kind of HQ in Mexico like the GWG have with the university of Morelia. Is there a possibility to do this? How important is it?
- Fresh blood is a very often mentioned subject. Are we going to have more controlled exchange of fish between breeders and is this useful? Having a look at the colors of a platy strain in nature and the same location 10 years later in the aquarium makes clear that we are losing traits from the original fish. Introducing wild fish to an aquarium strain is not a good idea. You should keep the new fish separated. Should we get more wild imports or stick with what we have and exchange these?

This are just a few of the points we have to discuss. I think we have a lot of nice fish in our tanks. They are called grey fish on some T-shirts, but everyone who keeps them knows better. Most of the *Xiphophorus* species are lovely fish. I mean 551 wild breeding units makes it clear that people love them.

A good overview of all the breeding units we have is a good solution to see which strains need some extra support. They are worth it.

## Discussion

There are several things that we should discuss in the XWG. I mention a few to start the discussion:

- Are we going to propose a way to describe the location? I know this has been a subject for discussions many times already.
- How far do we want to go with exchanging fish? Are we going to use ESU's like the GWG does?
- Should we try to get more breeders for some of the species that are only maintained by a few people? These are also the species that have a small habitat and might be considered at least vulnerable. Maybe we can do it in the same way as in the Northern Platyfish project? Who is going to do it?
- It would be helpful if we could get a kind of HQ in Mexico like the GWG have with the university of Morelia. Is there a possibility to do this? How important it is?



- Fresh blood is a very often mentioned subject. Are we going to have more controlled exchange of fish between breeders and is this useful? Having a look at the colours of a platy strain in nature and the same strain 10 years later in the aquarium, it makes it clear that we are losing traits from the original strains. Introducing wild fish to an aquarium strain is not a good idea. You should keep the new fish separated. Should we get more wild strains or stick with what we have and exchange these?

These are just a few of the points we have to discuss. I think we have a lot of nice fish in our tanks. They are called grey fish on some T-shirts, but everyone who keeps them knows better. Most of the *Xiphophorus* species are lovely fish. I mean 551 wild breeding units makes it clear that people love them.

A good overview of all the breeding units we have is a good starting point to see which strains need some extra support. They are worth it.



21

***Xiphophorus clemenciae* is of hybrid origin. This also applies to its close relative *X. monticolus*.** (Photo: Juan Carlos Merino)



- 
- Puente Chinoluiz

**Puente Chino Luiz is one of the places where *X. clemenciae* can be collected. In the same place you can find *Poeciliopsis gracilis*, *Poecilia* cf. *sphenops*, *Xiphophorus hellerii* and *Priapella intermedia*.** (Photo: Kees de Jong)

**We will publish the detailed data only after the nomenclature has been reviewed and corrected.** A dedicated task force is already working on this, but if you want to help us, please [contact us](#).



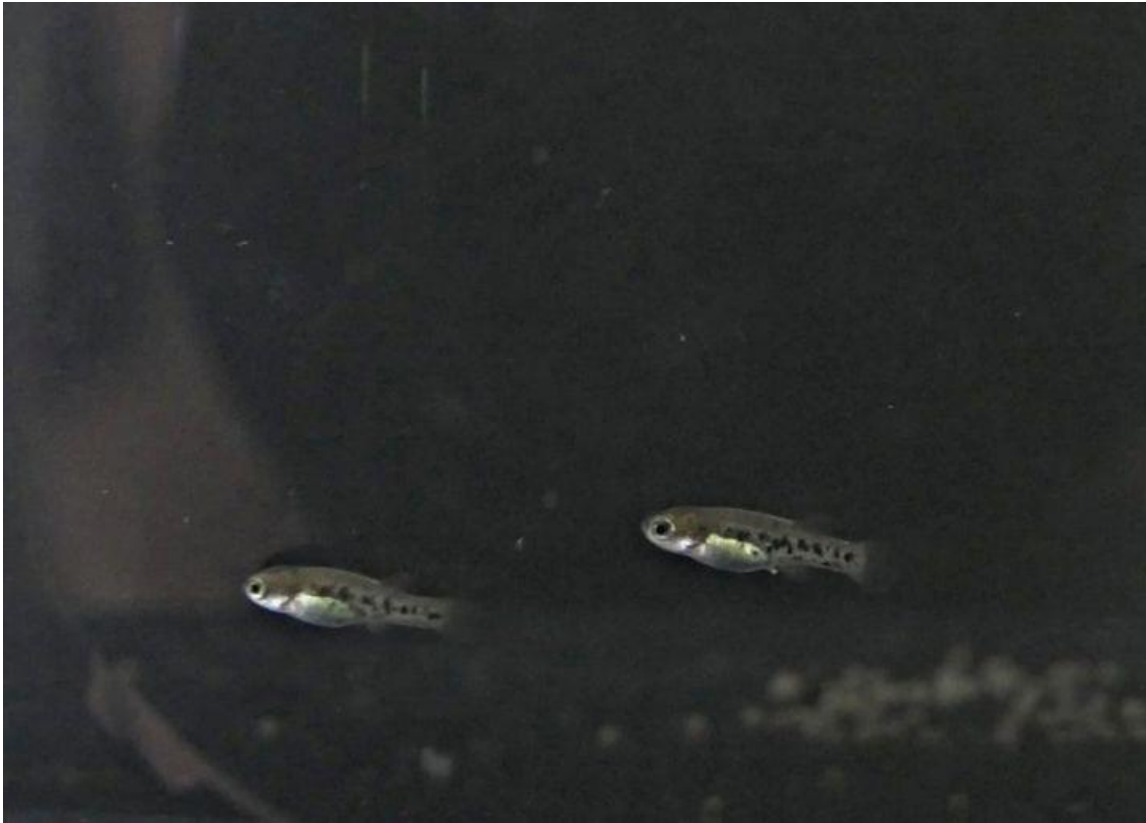
## Snippets

1. During a recent conversation with our Chairman, Steve Oliver, he mentioned that he had moved a tank containing *Phallichthys tico* on to the windowsill of an east-facing window in his fish-room. Previously, the tico had been problematical and not breeding. That morning, Steve noticed two things :- first that the tank was now green with algae promoted by the sunlight; and second, that the tank was now full of fry. So. If your *P. tico* are not breeding for you, that is something worth trying. [It might also be worth trying for a number of other small *poelliids* if they are proving reluctant to breed.]

2. My own problems with *P. tico* continue. When I went away on holiday in early May I had a tank full of *P. tico* with fry appearing at regular intervals and plenty of fry in the tank. When I came back, no fry. All gone! And no more fry born since. Plus the adults have slowly been dying off and I now have just four adults left, of which only one is a definite female. This all seems to stem from a little over a week without food. The moral of the story :- if you are keeping *P. tico* and are going to be away for more than a few days, buy an automatic feeder.

3. *Characodon lateralis*. I have been keeping this species for a while now, with limited success. When I went away on holiday the biggest and best female was heavily gravid so I moved her into a small tank on her own. When I came back she was thin again and there was no sign of any fry. Much cursing ensued! Just recently, another female has dropped fry that I managed to save but they were tiny – much smaller than normal. So when I saw the photos below from Holly Walford, I was really jealous.





Thanks Holly – I hope that you get lots more fry and can grow them on and spread them around as this endangered species needs all the help that it can get!

4. Did you see the article about mollies in the August issue of “Practical Fishkeeping”? It has some great photos and just touched on a topic raised in a talk given by Fred Poeser at the convention at Warwick a few years back. Fred’s title included the question “How many species of molly are there?” The answer is not so simple. Fred teaches biology at a high school in The Netherlands. He has managed to organise that his advanced level students can use the facilities of the university near his school to investigate the DNA of fish that he himself has collected in the wild. The results of that DNA analysing seem to show that some forms of molly which look quite different have such similar DNA that they should be considered the same species whilst other forms which look alike have such different DNA that they should be considered different species. I took notes during Fred’s talk and he was kind enough to email his slides to me but when I tried to work them up into an article for “Livebearer News” I just found it too difficult. I keep hoping that Fred will write the article himself.



## Two meetings and a visit *by Greg Roebuck*

### Meeting 1 : The GWG convention in Vienna 27<sup>th</sup> to 29<sup>th</sup> May 2022

I had been looking forward to this convention since the GWG meeting in Chester in 2019 and I wasn't disappointed. Arrived in Vienna on the Wednesday evening, met up with Nigel, Shaun, Erwin Radax and Michael Kock at the Haus des Meeres on the Thursday. The Haus des Meeres is worth a visit of its own. A former WW2 anti-aircraft radar/gun tower, 47 metres tall and with nine floors of tanks and exhibits, plus a basement, a floor of meeting rooms and a top-floor restaurant.



The Haus des Meeres building

*Photo : Greg Roebuck* 25



Some of the Haus des Meeres exhibits in the public area:-





*All three photos above : Greg Roebuck*

The best bit for me, though, was the tour of the basement where Michael maintains dozens of tanks of goodeids and other livebearers.





Just one aisle of tanks in the Haus des Meeres basement – there were another three aisles like this.  
*Photo : Greg Roebuck*





Michael doesn't label his tanks – after all, he knows which species they contain!  
*Photos : Greg Roebuck*

Thursday afternoon was spent in central Vienna, seeing some of the sights and having a beer (or two). With Michael having to work during the day on Friday, Nigel, Shaun, Bill, Erwin and myself caught the train to Erwin's home in Wien-Neu-Stadt. After a tour of the town some time was spent at Erwin's home, looking at his set-up and discussing his methods, and then bagging up fish to be given to various people at the convention.









Erwin keeps many species of fish in outdoor tubs and ponds during the summer months :-







Seven photos above : - Greg Roebuck

Friday evening saw the arrival of most of the convention attendees and a meal at a restaurant near the Haus des Meeres. This gave us a chance to chat to goodeid keepers from all over Europe.

On Saturday morning we arrived at the Haus des Meeres soon after 9.00 am and were taken up to the big meeting room on the 10<sup>th</sup> floor. Here a video link had been set up to Steve Oliver [unable to attend due to Covid] and Miguel Aires Tinoco Andrades [also unable to attend].

The first talk of the day was given by Michael Kock and was entitled “Brothers of Splitfins – the *Profundulus* Species of Oaxaca”. During his talk Michael explained what *Profundulus* are, why they are targeted by the Goodeid Working Group [they are killifish, after all, but they are closely related to goodeids and considered to be a sister group] and about the Oaxaca species and their habitats. At the end of this talk we learned that the next GWG meeting is to be in Oaxaca in November. Tempting! The second talk of the day was given jointly by Nigel and Erwin and described their trip with Michael and Isai Betancourt to Oaxaca. With lots of stunning photos, especially of the Rio Atoyac swordtails, it really made me jealous.

The first session of the afternoon was given by Mark Liziczai and was entitled “When goodeids go to school”. In this talk Mark described the situation of goodeids in Hungary before the GWG and how he developed a breeding centre for goodeids at the school where he worked and two other schools. 28 Hungarian members of the GWG and three zoos are now involved in the project. This led on to other conservation and research projects. This talk got me thinking – could we do something similar in Britain to help with the conservation of goodeids or other livebearers? After all, that is one of the stated aims of the BLA.

The next talk was given by Marketa Rejlkova and had the title “Natural Habitats of the Northern Platyfish – their former (and future) home.” Of the original six northern platies, only *Xiphophorus gordonii* is left in the wild, but that is threatened by water extraction. Many of the pools where it was found have already dried up. Other fish from the same area which are similarly threatened include cichlids such as *Herichthys minckleyi*, *Gambusia marshi*, two species of cyprinodont and lots of other endemic species.

The last session of the day was also dedicated to the *Xiphophorus* Working Group – with lots of discussion of how best to maintain and conserve the many endangered species / forms of this group of fishes.





A break between talks – do you recognize the face on the screen?

*Photo :- Greg Roebuck*

After another enjoyable meal in the evening the Sunday was taken up with a sociable trip to the medieval village of Durnstein and its castle where Richard the Lionheart was held to ransom, overlooking the Danube.

The next international meeting of the GWG is this November in Oaxaca, Mexico and the next European meeting of the GWG is in the autumn 2023 in Slovenia.

### **Meeting 2 : - The BLA show and auction, Basingstoke, Sunday 26<sup>th</sup> June**

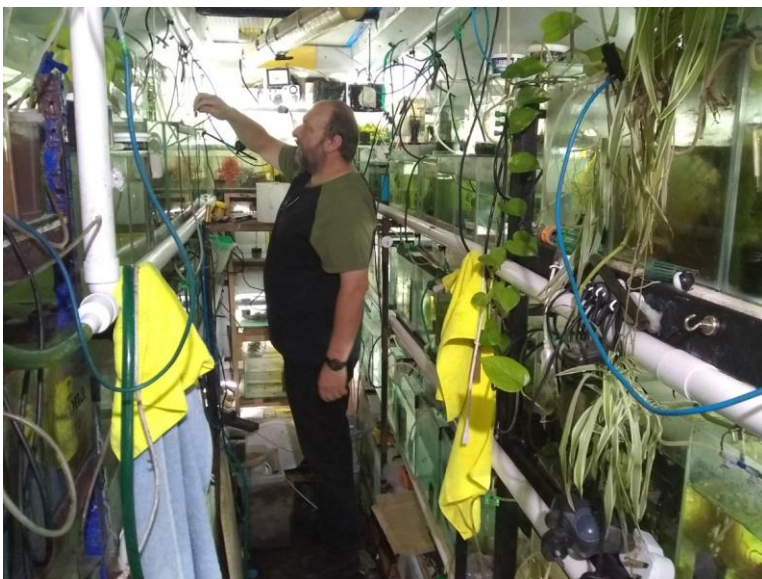
This was the first BLA event in the south of England since before the pandemic. A lot of thought had gone into the event; our former treasurer Don came to give a talk, there were biotope tanks on display and it was the first chance that people who can't travel to the Midlands have had to attend an auction for quite some time. About fifty people came along and everyone that I spoke to really enjoyed the event. It was great to be able to speak to people with whom I had only previously communicated by email. Dave Macallister did the auctioneering with his usual style and humour and the auction raised funds for charity, for the aquarium at Tropiquaria and even a little for the BLA. Top prices that I could remember afterwards were £67 for a group of *Xiphophorus cortezi* and £55 for a pair of *Characodon audax*.





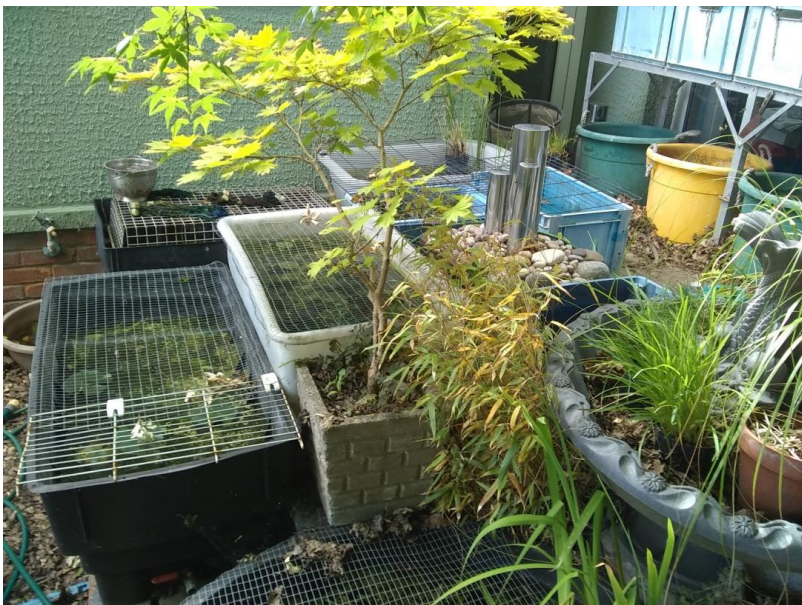
### **And a visit to Nigel**

It is always a pleasure to visit Nigel (Hunter). A long-time stalwart of the BLA and general fish fanatic, his fish-room is always a sight to behold. Since I last visited he had acquired a new, larger, shed and fitted it out. The last one had so many tanks in it that, once inside, it was difficult to move. This one shows the same “reverse-tardis” effect, as you can see in the photos below :-





I intend to copy some of the ideas that Nigel has put into place – I must get organised ! Nigel is also a pioneer in the keeping of *goodeids* and other subtropical species outdoors during the British summer. The photos below show just a few of the containers that he uses for this purpose.









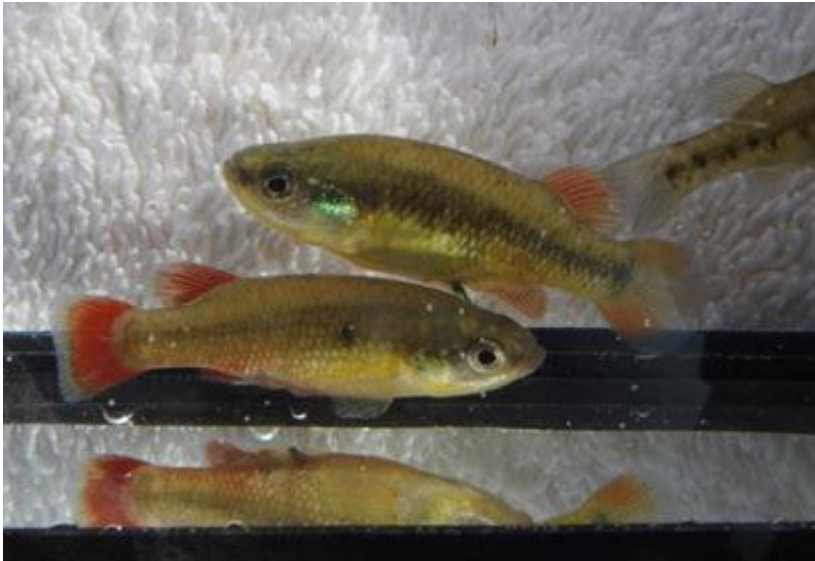
## *Characodon*: Chaos and Confusion by Michael Koeck

I recently again stumbled over some confusion about what is *Characodon audax* and what is *Characodon lateralis*. I therefore thought of collecting and presenting six key observations about this genus to bring some light into this chaos, though I honestly think that some chaos will remain due to the uncertainty of the type location of *Characodon lateralis*.

Observation 1: Three species are described. Chronologically ordered are this *Characodon lateralis* (Günther, 1866), *Characodon garmani* (Jordan & Evermann, 1898) and *Characodon audax* (Smith & Miller, 1986). *Characodon garmani* is only known from a single female specimen and is regarded extinct. It was described from Parras de la Fuente in Coahuila, which is far from the distribution of the rest of the genus. Whoever is interested in the validity of this species and the riddles connected to its discovery and description could go here <http://www.goodeidworkinggroup.com/characodon-garmani> and select the chapter "Terra typical". The other two species can still be found in the wild, with *Characodon lateralis* being much rarer than *Characodon audax*.

Observation 2: Genetic studies over the past 25 years revealed consequently two separate lineages within the extant populations of the genus *Characodon*. One is encompassing populations that are distributed below the "El Saltito" waterfalls, and another one encompassing those above the falls. The differences are big enough to regard them as two separate species: *Characodon lateralis* below the falls and *Characodon audax* above the falls. The whole area below the falls is about 30 m below the area above the falls, and the El Saltito waterfalls mark this huge step that separates the two areas of distribution.

Observation 3: It is incorrect to say that that black-finned males are *Characodon audax* and red-finned males are *Characodon lateralis*. Contrarily, almost all populations of *Characodon* have predominantly male individuals with unpaired red fins and even red bodies (except for the population of El Toboso, the type locality of *Characodon audax*, which is known for having males with black unpaired fins). At each location occurs a broad variety of color in males, starting with ones without any color in unpaired fins through those with red fins and even red bodies. On the other hand, in some populations (e.g., Abraham Gonzales, Pino Suarez, Los Pinos) totally black males can occur (at least in captivity).



*Characodon audax*, Laguna Seca, crimson red male, uncolored male and orange-yellow male.  
Photo credit: Günther Schleussner



*Characodon audax*, crimson red male with red body, spring close to the Laguna Seca.  
Photo credit: Günther Schleussner



*Characodon audax*, blood red male. Photo credit: Günther Schleussner



*Characodon audax*, yellow male. Photo credit: Gunter Teichmann





*Characodon audax*, Los Pinos (pay attention to the broad black terminal bands in unpaired fins).  
Photo credit: Anton Lamboj



*Characodon audax*, El Carmen, crimson red male. Photo credit: Günther Schleussner



*Characodon audax*, crimson red male with red body, San Rafael.  
Photo credit: Günther Schleussner



*Characodon audax*, El Toboso, males with red in unpaired fins (compare with Los Pinos male before).  
Photo credit: Günther Schleussner





*Characodon audax*, Abraham Gonzales, orange male.  
Photo credit: Günther Schleussner



*Characodon audax*, Abraham Gonzales, red male.  
Photo credit: Leo van der Meer





*Characodon audax*, Ojo Garabato, crimson red and uncolored male.  
Photo credit: Günther Schleussner



*Characodon audax*, Pino Suarez, crimson red male with red body.  
Photo credit: Bruno Kaubisch



*Characodon audax*, Pino Suarez, different looking males from two mothers (black, uncolored, crimson red, orange-yellow). Photo credit: Bruno Kaubisch



*Characodon lateralis*, male from the old Miller collected from the San Juan spring (which is circulating as Los Berros). Photo credit: Anton Lamboj





*Characodon lateralis*, an uncolored male from Los Berros (Ojo de agua Los Berros spring system). In 2015, all males in this spring looked like that. Photo credit: Günther Schleussner



*Characodon lateralis*, male from la Constanca. Photo credit: Günther Schleussner



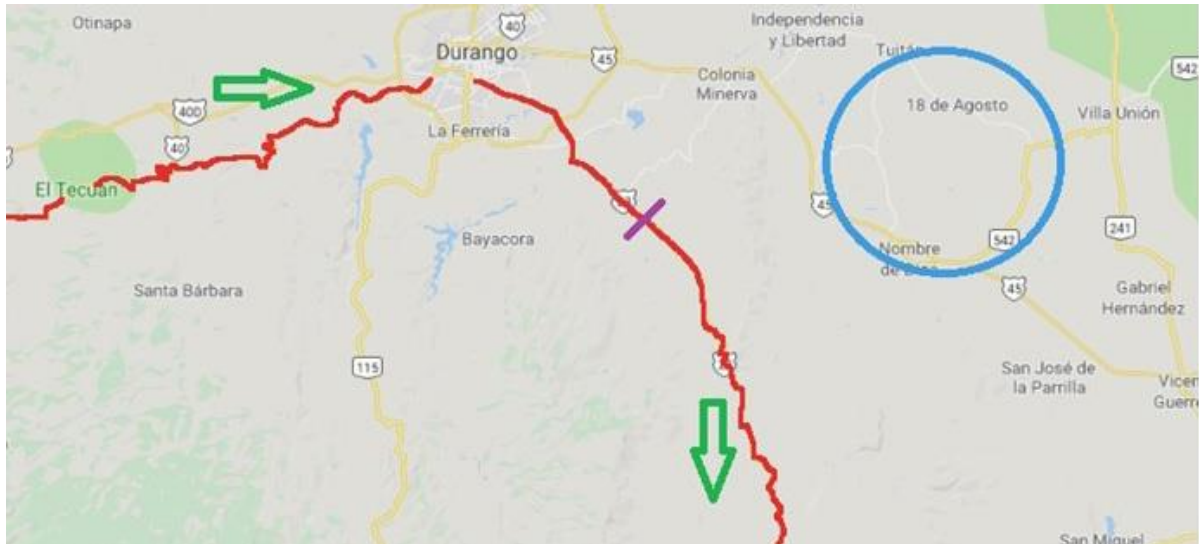


*Characodon lateralis*, uncolored male from Amado Nervo.

Photo credit: Michael Köck



Cascadas El Saltito, the barrier between *Characodon audax* and *lateralis*.  
Photo credit: Michael Köck



Possibly Seemanns route from Victoria de Durango to Mezquital, violet bar is the Arroyo La Estancia at Pino Suarez, the blue circle the area of *Characodon lateralis*. Credit: Michael Köck

Observation 4: To think each location has a typical coloration is an illusion. In the aquarium we breed with either the fish we get or the fish we select from those we have. However, even if we start with a bigger number of randomly collected fish, sooner or later we drift into a kind of line breeding. By the time we get aquarium stock somehow we end up with different looking populations, ultimately this man-made situation doesn't represent natural situation at all. The colour varieties of almost all populations tend to overlap.

Observation 5: There is uncertainty about the type locality of *Characodon lateralis*. Berthold Carl Seemann, who collected the nine types of *Characodon lateralis*, probably collected his specimens on the road between Victoria de Durango and Mezquital, and very likely close to Pino Suarez. A fact that Juan Miguel Artigas Azas explained in a presentation at a Goodeid Working Group (GWG) convention in Morelia, back in 2014. Kudos to him for researching so precisely! This population belongs to those above the falls and is regarded to be *Characodon audax* nowadays. This means that, if this could be supported in the future, *Characodon audax* would have to be named *Characodon lateralis*, while the old *Characodon lateralis* would require a new description. *Characodon audax* would become a synonym of *Characodon lateralis*, and *Characodon lateralis* would be one of the new to-be-described species. Confused? No problem, just keep in mind that changes in the taxonomy of *Characodon* are likely to happen. For the moment, fish from localities above the waterfalls are named *Characodon audax*, those from below the falls *Characodon lateralis*. For those who are interested in Seemann's journey: <https://archive.org/details/narrati-veofvoya02seemuoft/>, the part of our interest starts with page 159.

Observation 6: The *Characodon audax* population from El Toboso is phenotypically a bit different from the other populations of this species (Tobler, 2014). Besides the coloration (though wild fish partly also have large portions of red in their unpaired fins), there are some morphological differences, but these differences are not big enough to support the splitting of red- and black-finned *Characodon audax* into two species and are most likely a result of the isolated habitat. A similar situation can be found in the La Constancia population of *Characodon lateralis*, which is restricted to a 2- x 4-m small spring pool on a private property with a small number of individuals.

Finally, the legend to the map below: The extant populations of *Characodon*—so far we know—occur in three subbasins of the Río San Pedro basin, the Rios Saucedá (SAU) and Durango (DUR) subbasins are named for consecutive sections of the same river, which is called Río Mezquital further downstream and finally Río San Pedro. The Río Poanas (POA) is an eastern affluent of the Río Mezquital. The whole area is outlined with a bold red line, the subbasins are separated by thin red lines. The black bar shows the Cascadas El Saltito, the barrier between *Characodon audax* (green, above) and *C. lateralis* (orange, below). Here is the list of the localities we keep in aquaria and the corresponding abbreviations on the map from North to South: Los Pinos (LP), Laguna Seca (same as Guadalupe Aguilera, LS), Arroyo Las Moras in San Rafael (SR), the private spring in El Carmen (EC), El Toboso (ET), Abraham Gonzales (AG) and Ojo Garabato (same as 27 de Noviembre, OG) and the Arroyo La Estancia at Pino Suarez (PS). These are *Characodon audax*. Then we have very close to each other the San Juan spring (SJ, there are still fish from Miller's collection to find), Los Berros (LB), then the private spring in La Constancia (LC) and Amado Nervo (AN), the only population we keep that originates from the Río Poanas subbasin. These are *Characodon lateralis*.



**NB** This article appeared previously in the Bulletin of the American Livebearer Association and I am very grateful to Rit Forcier of the ALA for sending me the bulletin and to Michael Kock for giving permission for me to reproduce it here.



## Regarding *Allotoca*

Many of the different species in the genus *Allotoca* are highly endangered, if not extinct in the wild. This, of course, makes their captive maintenance and breeding all the more important. I only recently found out that there is an *Allotoca*-group dedicated to the captive breeding of this genus and that it is necessary to fill in an application form to join the group and receive fish from the group. I duly filled in the application form and was contacted by Jože Vrbančič, of Slovenia, with the offer of some *Allotoca zacapuensis*. Unfortunately, Slovenia is a long way to go to get these fish but I did manage to source some in the UK. When I let Jože know that I had managed to acquire this species he offered the following advice:-

I need to warn you, as I warn all other members: *Allotoca*'s are all very sensitive to few things, and this needs to be observed and followed, to keep them for a longer period:

1. Water quality - *Allotoca* species are very sensitive to bad water quality, and here it means to this part of water quality, which is not possible to remove with any kind of filtration - they do not go well with faecal bacteria in water. This kind of pollution you can remove only with changing of water;
2. Food - *Allotoca* species are voracious eaters and with too little food or poor food quality, they will not endure for a long time;
3. All *Allotoca* species are predators, and if you do not remove highly pregnant females away from main tank, you can not expect any serious breeding success, because adults will readily eat all small animals in aquarium, including newborn fish. But you can try, if you can get very healthy guppies, to put guppies in tank. It is quite possible, that young guppies will be well accepted additional meal for *Allotocas*.
4. *Allotoca* species need "winter rest", means period of few months with temperature of water lower than 20°C, so they stop reproducing and that their bodies can regenerate.

I have success with breeding of *Allotoca* species and stand behind this.

*Allotoca zacapuensis* tend to be very shy species, so they need a lot of cover, roots, thick plants, holes...

And females can very quickly eradicate males in aquarium, and to avoid this, I highly recommend you that you feed on different spots on same time, so most aggressive fish can not harass others on different places at the same time.

Jože also adds :-

In 2020 I successfully bred and raised enough *Allotoca zacapuensis* to send them to members of *Allotoca* - Mesa Central project, to Portugal, France, Netherlands, Denmark, Austria, Hungary, Slovakia, and some stayed with me in Slovenija. And most of the breeders who followed instructions, have great success in breeding of *Allotoca* species.

Wish you great success,

Jože

Many thanks , Jože , for this advice which I intend to follow closely.

## Diary dates

# Fishkeeping Extravaganza

17th & 18th September 2022

Holiday Inn

South Normanton

Derbyshire

DE55 2EH

**17th & 18th**  
**September 2022**

For further information contact  
[extravaganza@killis.org.uk](mailto:extravaganza@killis.org.uk)



Venue  
Holiday Inn  
South Normanton  
Derbyshire  
DE55 2EH



Events during Weekend

- Fish Shows
- Fish auctions
- Forums
- Lectures
- Trade Tables

Web page — <https://killis.org.uk/wp/extravaganza-2022>

**FISHKEEPING EXTRAVAGANZA**  
**17th and 18th September 2022**



**AUCTION**  
**Sunday 18th**

Now is the time to start thinking about the fish you want to bring to the auction. This is an open auction, so any species of fish kept within the hobby is welcome.

We are already expecting some great fish in this auction, including Killifish (**Including the BKA show fish**), Livebearers and Cichlids from the host associations.

To get your auction letter please contact Steve Oliver  
([steven.oliver\\_feoc@yahoo.com](mailto:steven.oliver_feoc@yahoo.com))

**Please note; this auction will be strictly cash only, we do not have cashless facilities.**

Holiday Inn  
South Normanton  
Carter Lane East  
Alfreton  
DE55 2EH

**Auction starts at**  
**11.30**

Terms and conditions will be provided and strictly apply