

Livebearer News

Official Members Magazine of the
BRITISH LIVEBEARER ASSOCIATION



Issue 76

December

2023

Contents

- Page 1:** Front cover
Page 2: Contents, Data Protection Act, Committee.
Page 3: Editorial
Page 4: Dear Editor, a letter from *Dan Fromm*
Page 5: Musings from the fish room, by *Greg Roebuck*
Page 6: Obituary; Pat Lambert, by *Alan Rothwell*
Page 7: An addendum from *Greg Roebuck* + Report on the Autumn Convention
Page 8: Snippets, by *Greg Roebuck*
Page 9: A new species in the genus *Phalloceros*, by *Kees de Jong*.
Page 14: *Skiffia lermæ*, by *Kees de Jong*
Page 17: The Cuban *Limia*, *Limia vittata* (Guichenot 1852), by Paul V. Loiselle
Page 22: Photos
Page 23: Notes from the field: variability of male *Poecilia hispaniolana* Rivas 1978's coloration, by *Dan Fromm*.
Page 26: Capacity building for conservation of endangered species of *Xiphophorus* in northeastern Mexico, by *Markéta Rejlková & Diana Juárez*
Page 36: Diary dates

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: steven.oliver-bla@outlook.com

Vice Chairman: Clive Walker: clivewalker076@gmail.com

Treasurer: Richard LeCoat: runefang1978@hotmail.co.uk

Editor: Greg Roebuck: gjrsr12@gmail.com

Events organisers: Paddy Davies: paddyd@googlemail.com

Holly Walford: heather.walford@outlook.com

Clive Walker: clivewalker076@gmail.com

Steven Milne: thefinroom@gmail.com

Membership Secretary: Peter Ellis: peter_c_ellis@hotmail.com

Goodeids conservation: Paddy Davies: paddyd@googlemail.com

Xiphophorus conservation: Bill Galbally: fishybilly@outlook.com

Fundraising and Sponership: Sheridan Pamplin: sheridan9999@outlook.com

Scottish Rep: Steven Milne: thefinroom@gmail.com

FGUK Liaison: Bill Galbally: fishybilly@outlook.com

Editorial

They say that you learn from your mistakes. Well, if I had learnt from all of my mistakes I would be a very wise man. And yet the mistake that I regret the most at the moment doesn't even concern my fish. A few years ago I had a conversation with Pat Lambert over the telephone. Pat owns (owned) the copyright to all the articles that her son Derek wrote and published in the magazine "*Aquarist and Pondkeeper*" and which became "*Today's Fishkeeper*" when Derek was editor of that magazine. Now I only met Derek twice and chatted to him for just a few minutes but I know that he was a good friend of many of the stalwarts of the BLA. I also know that Derek was an excellent fish-keeper and bred a huge number of species. He also went on several collecting trips to Mexico and also to Jamaica (and possibly other trips that I don't know about). Well, Pat invited me to visit her and see all the photographs and records from Derek's trips and breeding activities. I always intended going to visit with long-time BLA member Alan Rothwell on one of his infrequent visits but the pandemic and life in general meant that I never got around to it. And now that Pat has died (see below) I never will. A big mistake on my part.

On a happier note, it will soon be Christmas and then a New Year. The BLA are planning on holding four events again next year (*see Diary Dates at the end of this newsletter*) after four very successful events this year. I hope that we will see you at some (or all) of next year's events.

Many thanks are owed to Kees de Jong for the articles that he sent to me, to Alan Rothwell for his thoughts on Pat Lambert, to Paul V. Loiselle for allowing me to use his article on the Cuban *Limia* and to Dan Fromm for sending me that article. Thanks also to Dan for checking this newsletter and converting it to a PDF for me.

All that remains is for me to wish you a Merry Christmas and a happy and prosperous New Year.

Greg Roebuck

Dear Editor,

I'm writing in response to your remark "so many fishes, so little time" in LN #75's editorial. On the one hand, there are indeed many little-known freshwater livebearers. Aquarists with limited resources – that's all of us – and who are the least bit risk averse – that's many, if not most, of us – can easily find it hard to justify acquiring a "mystery fish" when it becomes available. On the other, since little is known about hard-to-obtain "mystery fish" there's more to learn from them than from readily available fishes that many others have. For me, the worst thing about mystery fishes is that they're hard to get.

The likely sources of fish within easy reach where I live in the US are pet stores and aquarium societies. Some stores are local units of national chains. Others are locally owned. They all have tanks filled with livebearers. Guppies, mollies, swordtails and platies, most of them fancy strains. No Goodeids. Club meetings are another place to find livebearers. Some of our clubs have breeders' award programs that require participants to offer fish they've reared in the club's monthly auction. BAP participants' incentive to offer fish for sale is gaining BAP points.

Again, most of the livebearers offered are offspring of fish obtained through the pet trade or from other aquarists. The big difference between fish offered at club meetings and fish sold in stores is that aquarists occasionally have wild stock poeciliids, Goodeids and halfbeaks.

We have a few distant sources of fish. www.aquabid.com, www.dansfish.com, and www.thewetspottropicalfish.com, come to mind. Vendors on AquaBid seem, for the most part, to be merchants or commercial breeders. Wet Spot and Dan's Fish – I'm not the Dan of Dan's Fish – import many of the fish they sell but buy from domestic hobbyists too. The one bright spot, for those who are interested in them, is halfbeaks. I think some species are bred in commercial quantities in the far east. Wet Spot and Dan's sometime bring them in. As far as I can see, the poeciliids and Goodeids currently in the US are what we have and what we're going to have.

I walked away from the organized hobby nearly twenty years ago. I'm now hardly aware of American aquarists who go to the tropics to collect fish. I know one person who, I think, still goes collecting. There may be more, but I'm not acquainted with them and see little evidence – livebearers and other fish new to the hobby – of their activity. There are travel agencies that run aquarists' tours, unfortunately not to places where livebearers occur.

I still go to the tropics to collect fish. Starting in 2019, after a long hiatus, I've introduced a few species of poeciliids that are new to the hobby or were long lost. I didn't offer them on AquaBid or attend American Livebearer Association meetings – too expensive – but have offered them at meetings of three nearby aquarium societies. In the one that has a BAP, three active participants have brought some of my fish back to get their BAP points, and that's it. The fish I brought in are going nowhere in the hobby. This isn't a surprise.

I first went to the tropics in 1973. Since then I've brought back dozens of species of characins, cichlids, killies and poeciliids that were easy to breed and new to the hobby or long forgotten. I spread them around as best I could. They've all vanished. That's

the hobby. Aquarists keep fish for a while, rarely keep them for long. I've done the same. Too few resources, too many fish. Impossible to keep everything forever.

Most of the fish I've collected were little-known. Many were new to the hobby as well as to me. A few were even new to science. I've taken a lot of flak for bothering with them rather than going after fishes that the anti-aircraft gunners fancied. The gunners mostly fancied fish that other people already had and were certified "worth the trouble of getting."

I've enjoyed all of the fish I brought home, even several Costa Rican fishes that my late friend Bill Bussing, the ichthyologist of Costa Rica, characterized as "nasty, vicious, greedy, ugly things with no redeeming qualities." *Hyphessobrycon savagei* and *Talamancheros sieboldii*, if you're interested. Bill was appalled that I brought *T. sieboldii* home.

With this in mind, Editor, I encourage you to gamble on livebearers – and other fish too – about which you know little. Who knows? They might be pleasing.

Best regards,

Dan Fromm

Musings from the (editor's) fish room

1. I goofed. I admit it. I messed up. Up until recently I had a tank with seven adult *Allotoca zacapuensis*. I kept the species many years ago and got them through three generations before they just stopped breeding and I lost them. And then after I had visited Lake Zacapu in 2016 I really wanted to keep them again. Last summer I was lucky enough to be accepted onto the *Allotoca* conservation group and was given five pairs by Shaun Stevens. They have done well and I have several fry and still got seven of the original fish. And then when I was giving them a late feed of frozen bloodworms I made two big mistakes. First I noticed that one of the males was looking very much on his last legs but I hate culling fish so I left him in the tank to give him another twenty-four hours. And then I dropped a clump of bloodworms and didn't take the time to siphon them out. And the following morning? Not just the old male but four more were dead. A big water change saved the last two but I had lost a very gravid female that I was planning to isolate to get as many fry as possible. A bad mistake with such a vulnerable species. Curses!

2. I goofed again! I sort of have an excuse – I was busy. I was doing the paperwork for the auction at the Autumn Convention when the auctioneer, Dave MacAllister said: "reverse trio of *Characodon audax* Guadalupe Aguilera". What I heard was: "trio of *Characodon audax*". So I bid for them and got them for a relatively low price; and then found out what I had bought! And they cannot be mixed with the *C. audax* El Toboso that I already have. Oh well, I do like Characodons anyway.

3. And I goofed yet again! I did some work on a tank containing a large number of *Xenotoca doadrioi*. And didn't notice that I had detached the airline from the sponge filter – for three days! And then when I went to feed the fish I noticed several dead ones and lots more clearly suffering. A very quick 60% water change followed by another 50% water change the following morning saved the great majority of the fish and made me feel a little better. Still, there are a number of lessons to be learned from my mistakes.

Obituary: Pat Lambert

Alan Rothwell

It is with great sadness that I have to announce the death of Pat Lambert at the age of 92. I have known Pat for around 40 years. I first met Pat and her son Derek when they came up from London to give a talk at the Yorkshire Area Group of SLAG (the Southern Livebearer Aquatic Group). This was in the mid 1980s. They said that if I ever got to London to go and visit them in Merton, South London. This was at a time when the Catfish Association of Great Britain was still going strong and so I used to go down twice a year and stay Friday to Sunday in order to attend the CAGB's convention and show. The next time I attended the CAGB event I went to visit Pat and Derek, her son, on the Friday of the event and have been friends with Pat ever since.

In 1988 Pat and Derek formed "Viviparous", the livebearer group that was a forerunner of the BLA. Viviparous ran for fifteen years until Derek died suddenly in February 2004. For the first Viviparous convention Pat and Derek brought over James Langhammer from America to give a talk. That convention was held at the Midland Hotel in Derby. For later conventions Pat and Derek brought over Manfred Meyer from Germany and Juan Miguel Artigas Azas from Mexico.



Pat Lambert (partially hidden, Derek and Pete Moore at the DGLZ meeting in Germany. Photo: Alan Rothwell

Addendum

I only met Pat a couple of times, unfortunately. I do know, however, that she encouraged Derek when he took up his hobby (obsession?) with fish-keeping. She drove Derek to fish shows and events and bought the tanks to allow Derek to expand his range of fishes kept. When Derek started to visit Mexico to collect fish, Pat did the driving and did that same again in Jamaica. When Derek and Pat started *Viviparous*, Pat acted as both Secretary and Editor of the association's magazine. She wrote some of the articles in the magazine and badgered people like Alan Rothwell for articles to fill out the publication. Later, she wrote articles for "Aquarist and Pondkeeper" and continued when the name of the magazine changed to "Today's Fishkeeper". When I spoke to Pat over the telephone, a few years ago, she very graciously gave me permission to use any of Derek's articles that have appeared in "Aquarist and Pondkeeper" or its successor or in the *Viviparous* magazine. Directly and indirectly, Pat had a big influence on the hobby of keeping livebearing fish in the UK.

I have in front of me a copy of the eulogy from Pat's funeral. If anyone would like to see the eulogy, then email me and I will scan it and email it to you.

Report on the Autumn Convention

No "Extravaganza" this year, just the BLA and the Fancy Guppy group. Much quieter and calmer than the last two years but a lovely atmosphere anyway. The weather didn't help and my two-hour journey to Shenstone, near Lichfield, took five hours instead of the expected two on the Friday afternoon. An hour or two's work saw the hall set up on the Friday evening and then a very pleasant meal in the pub next door.

On the Saturday the Fancy Guppy people had their show and I missed the chance to see all the top examples of the breeder's art. Shame. I am not really into showing fish but I do enjoy the ones in the show. And speaking of shows, Holly had organised a show and asked me to judge the Goodeid section. I picked a stunning male *Skiffia multipunctata* as my favourite with a huge *Allophorus robustus* in second place (but only just). Both very impressive fish. Our own Nigel gave his talk about his latest trip to Mexico – fascinating stuff which deserved a much bigger audience. A fish-and-chip supper and a pint finished the day off nicely.

And then of course there was the auction on the Sunday. This was well attended and with a very large number of fish entered; not just livebearers but cichlids, catfish and plenty more besides. Lots of shrimps were also put into the auction and went for very reasonable sums. There was also an auction of (very) fancy goldfish in aid of charity. They all sold and raised a reasonable sum overall.

Top prices paid in the auction were £52 for a pair of *Jenynsia onca* and £42 for a group of four *Xiphophorus cortezi*. Also notable were two groups of *Characodon lateralis* which went for £35 each.

I could easily have refilled all my tanks but just had to restrain myself. I must get some more tanks!

Snippets

Characodons. They are in trouble. In trouble in the wild with several of the original populations extirpated; in trouble in captivity also. My friend and BLA member Alan got in touch to say that he had several males but no females of *Characodon audax* “El Toboso”. I myself am down to one female of that species and about eight males. The last time the female was gravid she dropped just seven fry and three of those were dead. The other four didn’t thrive, barely grew at all and the last one of them died last week. In contrast, our own Dave MacAllister brought some back from Mexico some time ago and got huge broods. At the autumn convention he told me how his partner had sat with a gravid female that was giving birth and scooping out each baby as soon as it was born, so that the female had no chance to eat it -- she got seventy-two fry from the one female! Oh happy days! I don’t know the reason why we are now having so much trouble with them but my guess is that they have been in captivity for many generations and have become inbred.

I was talking about this situation with our Chairman, Steve Oliver, a couple of weeks ago. We decided to have a talk at the Bristol meeting next year about setting up an informal “Characodon group”. Let me know if you are interested in joining in or have any ideas about what the aims and conditions of such a group should be.

3. Do you read “*Practical Fishkeeping*” magazine? Our own Holly Walford has had a number of articles (including some of her own photos) published in the magazine in recent months. And then in the most recent magazine there was a full page from her about the British Livebearer Association. I am told that in the couple of days after the edition came out the BLA gained three new members as a result of Holly’s article. Well done Holly and keep up the good work!

4. Many of us keep the Tequila zoe, *Zoogoneticus tequila*, and many of us will know that it became extinct in the wild soon after it was discovered but has recently been reintroduced into the Rio Teuchitlán, the only site where it has ever been found. Our own Nigel Hunter was kind enough to post [#ProyectoTeuchitlán](#) on “Facebook”: The reintroduction of *Zoogoneticus tequila*, a relevant case study in The WAZA X RtR Short Guide.

Last week a guide to zoos and aquariums was published by [World Association of Zoos and Aquariums](#) and [Reverse the Red](#). It presents examples, case studies and areas of opportunity for zoos and aquaria around the world to engage in conservation programs that help reverse the problem of biodiversity loss.

The guide highlights a few success cases in zoos and aquariums that show us the hard work behind conserving endangered species. One of the cases mentioned is that of the reintroduction of *Zoogoneticus tequila* to nature, where together with [Chester Zoo](#) we managed to reverse the fate of the Tequila Splitfin, which is already swimming freely in the Teuchitlán River.

If you want to read the complete guide, you can download it by clicking on: <https://ow.ly/SScB50PV1S9>

The Laboratory of Aquatic Biology “J. Javier Alvarado Díaz” of the [Facultad de Biología umsnh oficial](#) thanks each and every person who has been involved in this conservation program, every institution, every media that has given us a space to

spread our work, the population of Teuchitlán and all our followers on Facebook, who supported us sharing our notes to reach more people in Mexico and the world.

Visit our University's website: <https://www.umich.mx/>
Visit the page of the Faculty of Biology where we belong:
<http://bios.biologia.umich.mx/>

Immerse yourself in the Knowledge.
LFMG

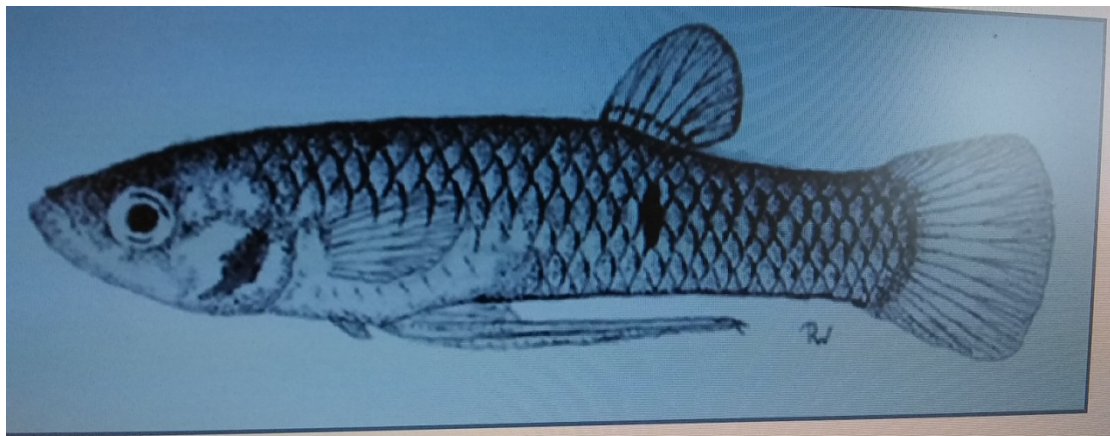
A new species in the genus *Phalloceros*

By *Kees de Jong*

In 1868 Hensel described the species *Girardinus caudimaculatus*. The species differed so much from the other species in the genus *Girardinus* that Eigenmann described the genus *Phalloceros* for the species in 1907. The name of the species became *Phalloceros caudimaculatus* (Hensel, 1868). For many years this remained the only species in the genus.

In 2008 Lucinda described 21 new *Phalloceros* species. Two of these (*P. aspilos* and *P. tupinamba*) are now called *Phalloceros leptokeras* (Lucinda 2008) and are no longer considered independent species (Souto-Santos et al. 2019). At that time there were 20 species in the genus. Most species originate from southern Brazil.

With *Phalloceros maldonadoi* (Souto-Santos, Lucinda & Buckup 2023) the twenty-first species has been added to the genus.



***Phalloceros leptokeras* (drawing Ruud Wildekamp).**

P. maldonadoi lives in several separated river basins in southern Brazil. These river basins were probably connected during the Pleistocene glaciation. The river bottoms consist of sand and gravel. In a number of places the newly described species lives together with other species from the genus *Phalloceros*.



P. maldonadoi the newly described species (Source: Souto-Santos et al 2023)

In the coastal state of Santa Catarina the species has a distribution area of 2,250 km² in which it lives in many places. The species is therefore not considered threatened.

The species is named after Javier Alejandro Maldonado-Ocampo, for his contributions to ichthyology. He was killed in 2019 during field research.

Many characteristics of the approximately 4cm long species are described by Souto-Santo et al.2023. They pay particular attention to a number of secondary sexual characteristics. The gonopodium of the males has been much studied and is often used as a characteristic to distinguish the species. The tip of the anal fin, which has been transformed into a sexual organ, contains hooks that are often distinctive. The gonopodium of *P. maldonadoi* distinguishes it from all but four other species in the genus *Phalloceros* by the shape of the hook. See Fig 2 below. This difference between the males' sexual organs ensures that species do not interbreed or that it is more difficult to interbreed.

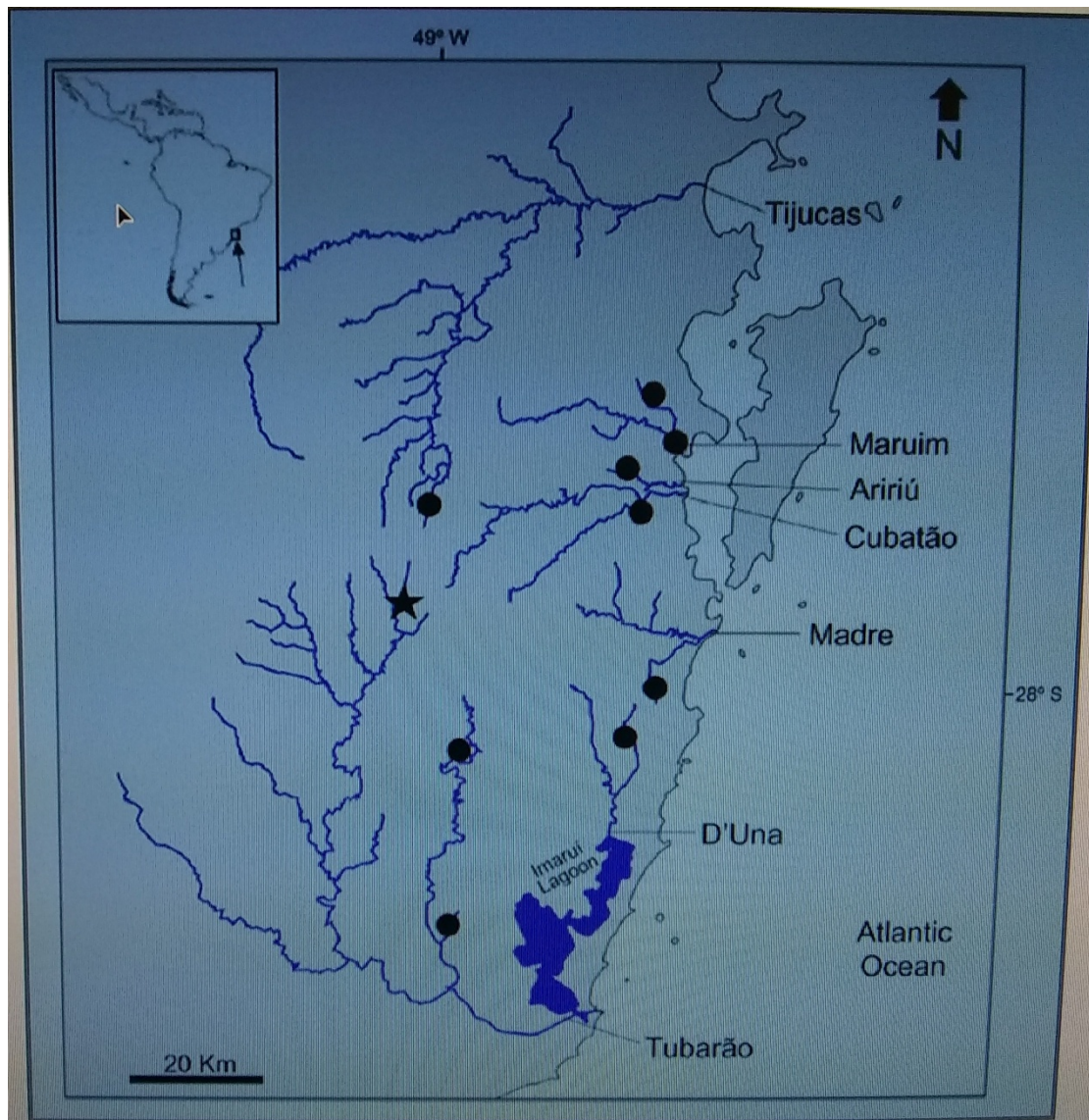


Fig 1. The habitat of *Phalloceros maldonadoi* in the south of Brazil. The star indicates the type location. (Source: Souto-Santos et al. 2023)

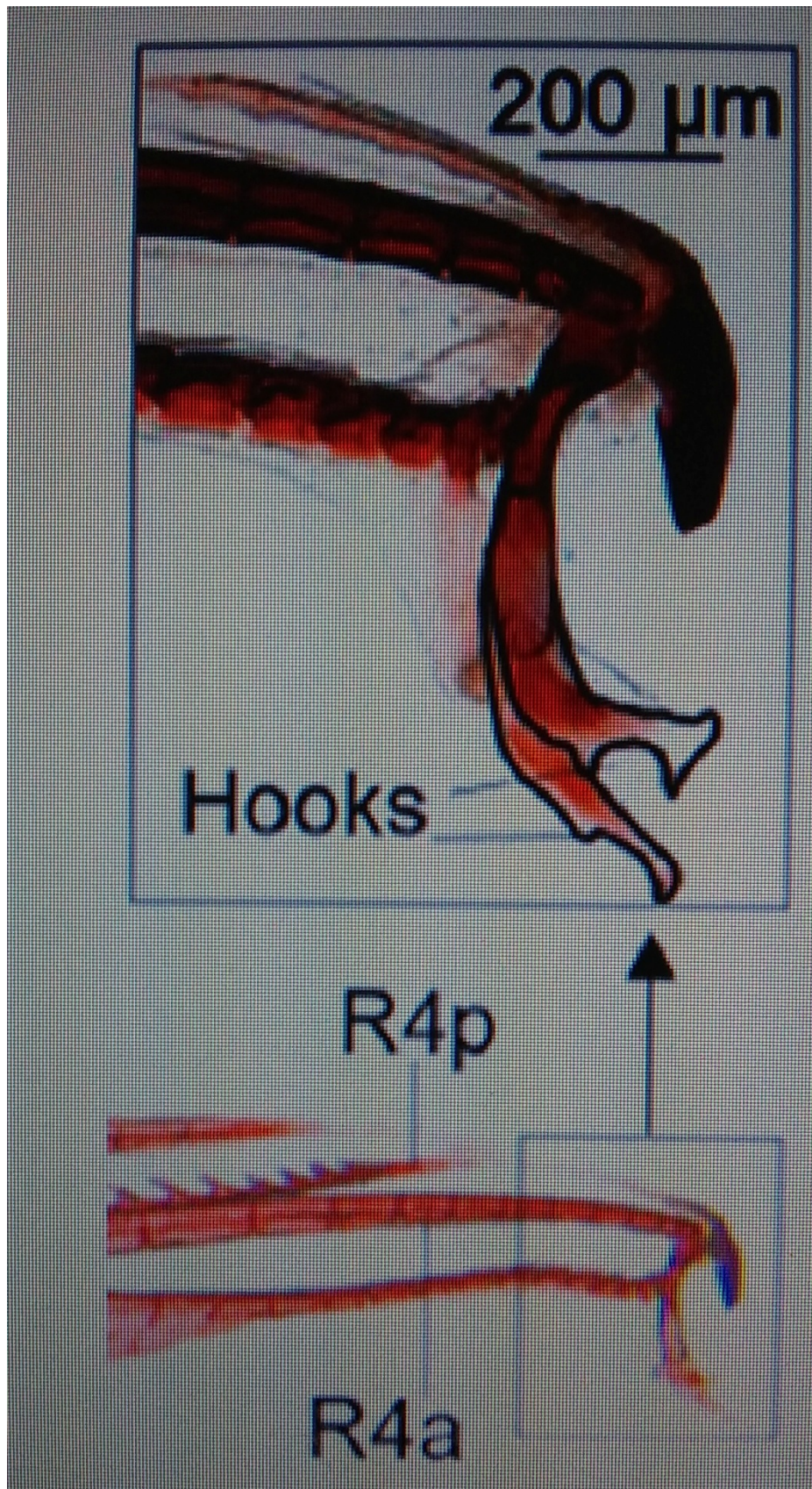


Fig 2: Details of the hook on the gonopodium of *P. maldonadoi*

The females have a urethra located between the anus and the anal fin. This opening is covered at the back with an extended skin flap. The presence of this skin flap in females is examined for the first time. This skin flap was present in six species: *P. caudimaculatus*, *P. elachistos*, *P. heptaktinos*, *P. maldonadoi*, *P. mikrommatos* and *P. titthos*. A distinguishing feature of *P. maldonadoi* is that the skin flap is

asymmetrically attached. An interesting feature for scientists. As with previous new species in the genus, this species is also not easy to distinguish from the other species. Without an accurate description of the capture site it is impossible for a non-specialist.

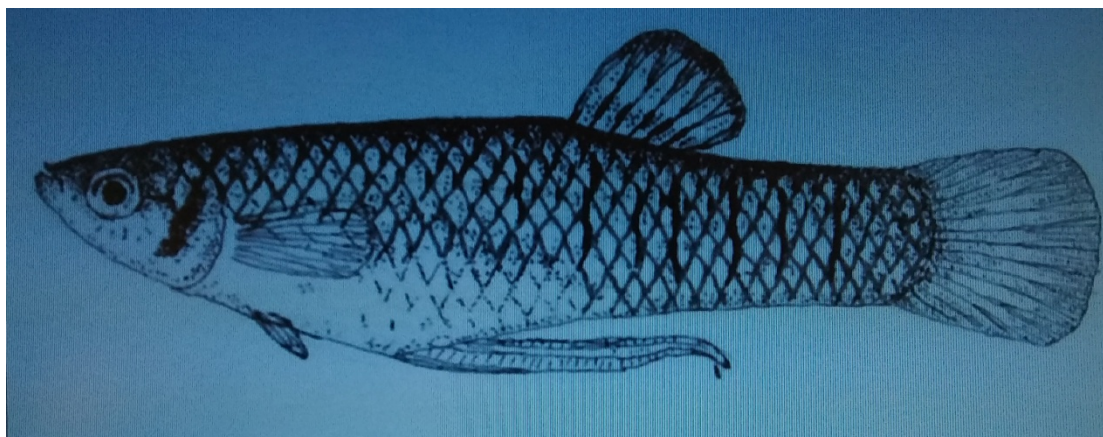
Sources consulted:

Lucinda, P.H.F. 2008. Systematics and biogeography of the genus *Phalloceros* Eigenmann, 1907 (Cyprinodontiformes: Poeciliidae: Poeciliinae), with the description of twenty-one new species. *Neotropical Ichthyology*. (6): 113-158.

Souto-Santos, I.C.A., W.B. Jennings & P.A. Buckup 2022. Testing palaeodrainage hypotheses in south-eastern Brazil: phylogeography of the sinistral livebearer fish of the genus *Phalloceros* (Cyprinodontiformes: Poeciliidae). *Zoological Journal of the Linnean Society* 197(2): 514-531.

Souto-Santos, I.C.A., P.H.F. Lucinda & P.A. Buckup 2023. Bilateral genital asymmetry in livebearer fishes of the genus *Phalloceros* Eigenmann, 1907, with description of a new species from coastal drainages of southern Brazil (Cyprinodontiformes: Poeciliidae). *Journal of Fish Biology*. 1-12.
<https://doi.org/10.1111/jfb.15410>

Eschmeyer's Catalog of Fishes | California Academy of Sciences
<https://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>
[Consulted on 16th July 2023]



***Phalloceros elachistos* [Drawing: Ruud Wildekamp]**



***Skiffia lermae* (Meek, 1902)**

Common name: Lerma Goodeid

Size: Females maximum 6cm

Males maximum 5cm

Temperature: 18 – 24°C. It is better for this species if it is kept at a lower temperature for a period of time. A constant temperature of 24°C or higher is harmful to this species.

Distribution: The habitat has decreased significantly in recent years. *S. lermae* now lives only in Lake Zacapu and a number of springs near Lake Pátzcuaro and the Rio Grande de Morelia river basin. It has disappeared from the Rio Laja and lakes Yuriria and Cuitzeo and the entire Rio Zirahuén river basin. In nature, *S. lermae* lives together with, among others, Goodeids from the genera *Xenotoca* and *Allotoca* and in Lake Zacapu also with *Girardinichthys irenae*. Plants found in that area include *Ceratophyllum*, *Elodea* and *Eichornia*.

Four distinct population (ESUs) are recognised in the current habitat. Populations must therefore be kept separate. The species is considered endangered.



The habitat of the Lerma Goodeid

Special features:

Compared to its close relatives *S. francesae* and *S. multipunctata*, *S. lermae* is not that popular among Goodeid enthusiasts. This is mainly due to the fact that the colours and markings of *S. lermae* are less appealing. In nature, males are attractively coloured during the mating season. They then have a blue-green body with a dark head and in some locations (e.g., Lake Zacapu) also a golden belly, but this pattern disappears in the aquarium. That leaves a silver-coloured fish without appealing features. The males can easily be distinguished from the females by their serrated dorsal fin, slimmer body structure and notch in the anal fin. The females have a gravid spot.

Individuals of this species often die quickly when caught in the wild. To prevent this, they must be regularly provided with fresh water.



A male *S. lermae* captured in Lake Zacapu; unfortunately the beautiful colours in the photographic tank have disappeared.

Once they get used to the aquarium, keeping and caring for *S. lermae* is not a problem. For proper care, an aquarium of its own is necessary. In addition to an open swimming area, this aquarium must also provide hiding places for the fish. With a group of fish that is doing well, breeding usually proceeds without problems. Just after part of the water has been replaced, the males become active and spar enthusiastically among themselves and determine their pecking order. During courtship, the partners swim near each other while vibrating. Depending on their size, the females give birth to up to 20 young per litter.

Unlike Poeciliids, the females of Goodeids cannot store sperm and must be re-fertilized after each litter. The young are between 10 and 13 mm long at birth and are not normally eaten by the larger fish. Although more targeted feeding works better if the young are reared separately, this is not strictly necessary. The gender distinction can be quickly determined by the notch in the anal fin that the males develop after a few months.

Skiffia lermae is endangered in the wild and deserves more attention from aquarists than is currently the case. It may be possible for the fish to regain their natural colours and markings with proper care. Keeping the fish outside in the summer months could be a solution to this.

Text: Kees de Jong

Photos: Juan Carlos Merino and Christian Reusch

Translated by "Google Translate" with a little help from Greg Roebuck

The Cuban *Limia*, *Limia vittata* (Guichenot 1852)

Paul V. Loisel, sent by Dan Fromm

The genus *Limia* Poey 1854 comprises twenty-two described and at least one undescribed species. With the exception of *Limia heterandria* Regan 1913, a species native to the mainland of Venezuela whose attribution to the genus is open to question, all are native to the Greater Antilles. Grand Cayman Island, Cuba and Jamaica are each home to a single species. Three of these species, *Limia vittata* (Guichenot 1852), *Limia melanogaster* (Gunther 1866) and *Limia nigrofasciata* Regan 1913 have a long history in the hobby, having made their debuts as aquarium fishes in 1907, 1908 and 1912 respectively (Sterba, 1966). Nine of the ten species currently being maintained were introduced to the hobby in the 1980s and 1990s, a period characterized by an upsurge of interest in “species livebearers” by serious poeciliid enthusiasts.

The subject of this article is one of these “old timers”. *Limia vittata* is both the type species and largest representative of the genus *Limia*. Males can grow to 2½” [6.5 cm] SL, with females capable of reaching a whopping 4” [10.0 cm] SL. As indicated by its common name, *L. vittata* is native to Cuba. This representative of the nominate subgenus *Limia* is found throughout the island and also occurs on the Isle of Pines (Franz and Rivas, 1983). Naturalized populations are present on Oahu and Hawai’i (Mundy, 2005). The precise date of its appearance in the Hawaiian Archipelago is unknown, but the suggestion that these populations are descended from aquarium fish released in the 1950s (Maciolek, 1984) is plausible.

The Cuban *Limia* is polymorphic with respect to its color pattern. Topotypical specimens are warm brown, shading to clear beige ventrally. The scales of their flanks are edged in iridescent light blue. The flanks are variably marked with narrow faint dark bars.

The unpaired fins of males vary in color from dark yellow to light orange and are marked with a more or less intense pattern of black dots and streaks, while those of females are hyaline. (Figure 1) This morph is most commonly encountered in the wild and appears to have been the one that was initially introduced to the aquarium hobby in 1907 (Sterba, 1966). While there is evidence that representatives of this plain morph is still circulating in the hobby – Baensch and Reihl (2004) illustrate both sexes – the irregularly blotched orange and black morph depicted herein is the more commonly encountered form of the Cuban *Limia*.

In his review of this species, North Jersey Aquarium Society member Ted Coletti presented the view advanced by some hobbyists that the blotched aquarium strain of *L. vittata* which I will henceforth refer to as the OB morph (figure 2) – arose in captivity through hybridization with another *Limia* species. While representatives of the genus will certainly hybridize in captivity, this explanation of the genesis of the blotched form of the Cuban *Limia* suffers from a serious difficulty – notably the challenge of identifying the putative second parent of these supposed hybrids.

Stoye (1935) is the first author to describe OB *L. vittata*. While there are two described *Limia* species whose melanophore pattern is based on irregular black spotting on the body and in the unpaired fins, neither was available to hobbyists at that time. According to Sterba (1966), *Limia ornata* Regan 1913 was imported into Germany in 1912 but failed to become established there. Stoye (1935) cites this species, but explicitly indicates that it was no longer available to hobbyists. As the second blotched species, *Limia fuscomaculata* was not described by Rivas until 1980 and is known only from the four type specimens (Rivas 1980), it is most unlikely to have figured in a hybridization event thought to have occurred at least forty-five years earlier! The Humpback Limia, *Limia nigrofasciata* Regan 1913 has been suggested as a possible hybridization partner. It was certainly circulating in the hobby on both sides of the Atlantic in the 1930's. However, published photos of *L. vittata* X *L. nigrofasciata* hybrids bear no resemblance to OB *L. vittata*. Stoye's observation (1935) that such OB individuals occur in some wild populations of the Cuban *Limia* provides additional evidence that these fish are descended from naturally occurring color variants of this species.

Limia are considered to be undemanding aquarium residents and *L. vittata* is typical of the genus in this regard. It will prosper over a pH range of 7.0 to 7.8 and hardness values between 5 and 17 DH. This species does not tolerate elevated nitrate levels. Either a program of regular partial water changes or the use of a chemically active filter medium such as PolyFilter© or PolyTech© will keep dissolved nitrates within acceptable levels. The Cuban *Limia* is a tropical lowland species that does not appreciate chilling. It will tolerate temperatures up to 84° F. [29° C.] but appears to be more comfortable between 72° F. [22° C.] and 78° F. [26° C.]. The Cuban *Limia* is a detritivore in nature. Its generic name, derived from *limus*, the Latin word for mud, refers to the feeding behaviour of these poeciliids. In captivity, it is omnivorous and enthusiastically devours any live, frozen and prepared foods it can comfortably swallow. Its diet should contain a significant percentage of vegetable matter. *Spirulina*-based flakes or TetraMin tablets are convenient means of meeting this dietary need.

Innes (1938) describes *L. vittata* as a "friendly" fish. As its behavior towards heterospecific tankmates is exemplary, it certainly qualifies as a good community tank resident. Given the water conditions it prefers, *L. vittata* would make a good dither fish for the Tanganyikan dwarf cichlids such as *Julidochromis* and the different shell dwelling lamprologines. Interactions with conspecifics are another story. Cuban *Limia* have a consort type mating system, in which a male attempts to monopolize access to a sexually receptive female. This may explain why males are intolerant of the close proximity of others of their sex. If these fish are crowded, males tend to establish a linear dominance hierarchy, in which the dominant individual will bully subordinates. This can result in losses if fish are housed in small tanks. It is thus tempting fate to house multiple males in anything smaller than a 29 gallon [115 liter] aquarium. A pair or trio will live comfortably in a 15 gallon [60 liter] tank, which is large enough to afford these active fish the swimming room they need.

The Cuban *Limia* is an easily bred livebearer. Large females can deliver very large broods. According to Innes (1938) a female at the Shedd Aquarium delivered a brood of 242 fry, setting a record for poeciliid fishes which apparently stands to this day. Adults do not prey upon their own fry. *Limia vittata* does well in outdoor tubs during the summer. I placed a male and two females in a 65 gallon tub on 29-V-16. I observed the first fry ten days later. When the tub was broken down on 14-IX-16, I

recovered the original trio of breeders, together with 13 subadults 1" – 1¼" [2.5 – 3.1 cm] TL, 6 fry 0.4" – 0.6" [1.0 – 1.4 cm] TL and 4 neonates 6.0 – 8.0 mm TL. Individuals less than 1" TL show no black lateral spotting and the unpaired fins of subadults are hyaline. The fish can be sexed at 1¼" TL on the basis of the incipient folding of the male anal fin to form the gonopodium.

Popular aquarium residents in the early days of the hobby, *Limia* species were overshadowed in the years following the Second World War by the swelling numbers of vividly colored varietal platies, swordtails, mollies and guppies. The renewed interest in "species" livebearers that started in the 1980s has led to a modest resurgence in the popularity of these attractive Caribbean poeciliids. At present, on-line vendors represent the best source for *Limia* species. A short time devoted to an internet search will reveal suppliers offering this species for sale as well as such congeners as *Limia nigrofasciata*, *Limia melanogaster* and *Limia melanonotata* Nichols and Myers 1923 (often listed as either *Limia garnieri* or *Limia perugiae*). Hopefully, this marketing trend will assure the continued availability of not only *L. vittata* but all of these colourful and easily maintained livebearers.

Literature Cited:

Baensch, H. A. and R. Riehl. 2004. *Aquarium Atlas. Volume 4*. Mergus Verlag, Melle, pp. 892.

Coletti, T. 2007. My Big Dogs from Cuba.

<https://www.tfhmagazine.com/articles/freshwater/my-big-dogs-from-cuba-limia-vittata>

Franz, R and L. R. Rivas. 1983. *Limia ornata* Regan. In: Lee, D. S., Platania, S. P and G. H. Burgess. *Atlas of North American Freshwater Fishes*. 1983 Supplement. North Carolina Biological Survey (1983-6), p. 38.

https://archive.org/stream/atlasofnorthamer00unse_0/atlasofnorthamer00unse_0_djvu.txt

Franz, R and L. R. Rivas. 1983. *Limia vittata* (Guichenot). In: Lee, D. S., Platania, S. P. and G. H. Burgess. *Atlas of North American Freshwater Fishes*. 1983 Supplement. North Carolina Biological Survey (1983-6), p. 45.

Innes, W. T. 1938. *Exotic Aquarium Fishes*. Innes Publishing Co., Philadelphia, pp. 511.

Maciolek, J. A. 1984. Exotic fishes in Hawaii and other islands of Oceania. In: W. R. Courtney and J. R. Stauffeer (Eds.) *Distribution, biology and management of exotic fishes*. John Hopkins University Press, Baltimore, pp. 131 – 161.

Mundy, B. C. 2005. Checklist of the Fishes of the Hawaiian Archipelago. *Bishop Museum Bulletins in Zoology* (6):

https://www.researchgate.net/publication/284574119_Checklist_of_the_fishes_of_the_Hawaiian_Archipelago

Rivas, L. R. 1980. Eight new species of poeciliid fishes of the genus *Limia* from Hispaniola. *Northeast Gulf Science* v. 4 (no. 1): 28-38.

<https://aquila.usm.edu/cgi/viewcontent.cgi?article=1053&context=goms>

Sterba, G. 1966. *Freshwater Fishes of the World*. Revised English language edition. Studio Vista, London, 878 pp.

Stoye, F. H. 1935. *Tropical Fishes for the Home*. Carl Mertens, New York, pp. 284.



Figure 1. Male (above) and female (below) wild caught *Limia vittata*, normal morph. Photos courtesy of longtime BLA member *Don Kenwood*, who was on the trip to Cuba when these fish were caught.



Figure 2. Male (above) and female (below) *L. vittata*, OB morph. Paul Loiselle photos.

Photos:



Girardinus falcatus Photo sent by Kees de Jong





Photos posted on “Facebook” by Erwin Radax, originally from a report on the work on the re-introduction project for *Skiffia francesae* and *Zoogoneticus tequila* in the Río Teuchitlán and posted by the Laboratorio de Biología Acuática “J. Javier Alvarado Díaz” of the UMSNH

Notes from the field: variability of male *Poecilia hispaniolana* Rivas 1978’s coloration

Dan Fromm

When Mark Sabaj and I visited the Dominican Republic in 2022 we collected fish I identified as *Poecilia hispaniolana* from the Río Macasia, an afferent of the Río Artibonito (DR)/Rivière Artibonite (Haiti) at La Zursa de Las Matas de Farfán. Some of the males were strikingly colored.

Rivas 1978 did not explicitly mention *P. hispaniolana*’s life colors in the description. He alluded to them:

Both species [the second species is *P. dominicensis*] occur together in several localities and their ranges are partly sympatric. At least in one locality *hispaniolana* occurs together with *dominicensis* and *elegans*. Males and females of *hispaniolana* and *dominicensis* are so similar in appearance that the presence of two species was not detected in the field while collecting in the localities where either species occurs alone, or where both species are now known to occur together.

In 2019 I collected *P. dominicensis* from the Río Jima and the Río Maimón, both north slope streams, and from the Río Basima, a south slope stream and an afferent of

the Río Haina, which Rivas 1978 designated as *P. dominicensis*' type drainage. Mark and I collected it from the Río Nigua, in whose drainage I believe the *dominicensis* type was collected, in 2022.

None of the male *dominicensis* I've seen in the wild or in my aquaria has orange pigmentation in the tail or on the body. This fact, our Río Macasia surprise's coloration and Rivas' remarks made me wonder whether our Río Macasia *Poecilia* might be new.

Rivas described *P. hispaniolana* using a large series collected from fourteen sites in Haiti and the Dominican Republic. The male holotype was collected from the Río Mijo where it crosses highway RD-2. By a happy chance this location is on the direct route from Santo Domingo to La Zursa de Las Matas de Farfán.

In 2023 Mark and I returned to the Dominican Republic. We collected *P. hispaniolana* from La Zursa de Las Matas de Farfán, the Río Mijo and the Río Jura. We found plain and 24olourful males at all three sites.

I conclude from this that there's considerable variation in male *P. hispaniolana*'s coloration. The Río Macasia surprise is nothing new. The variants we've seen may provide a starting point for selective breeding to intensify males' orange color.

Literature cited:

Rivas, L. R. 1978 (Dec.) A new species of poeciliid fish of the genus *Poecilia* from Hispaniola, with reinstatement and redescription of *P. dominicensis* (Evermann and Clark). Northeast Gulf Science v. 2 (no. 2): 98-112.

All photographs by Mark Sabaj, courtesy of The Academy of Natural Sciences of Drexel University.



Male *P. hispaniolana* ANSP 208809 collected in 2022 from the Río Macasia.



Pallid male *P. hispaniolana* collected in 2023 from the Río Macasia



Male *P. hispaniolana* collected in 2023 from the Río Mijo. There's faint orange



in the tail.

Plain and colorful male *P. hispaniolana* collected from the Río Jura in 2023

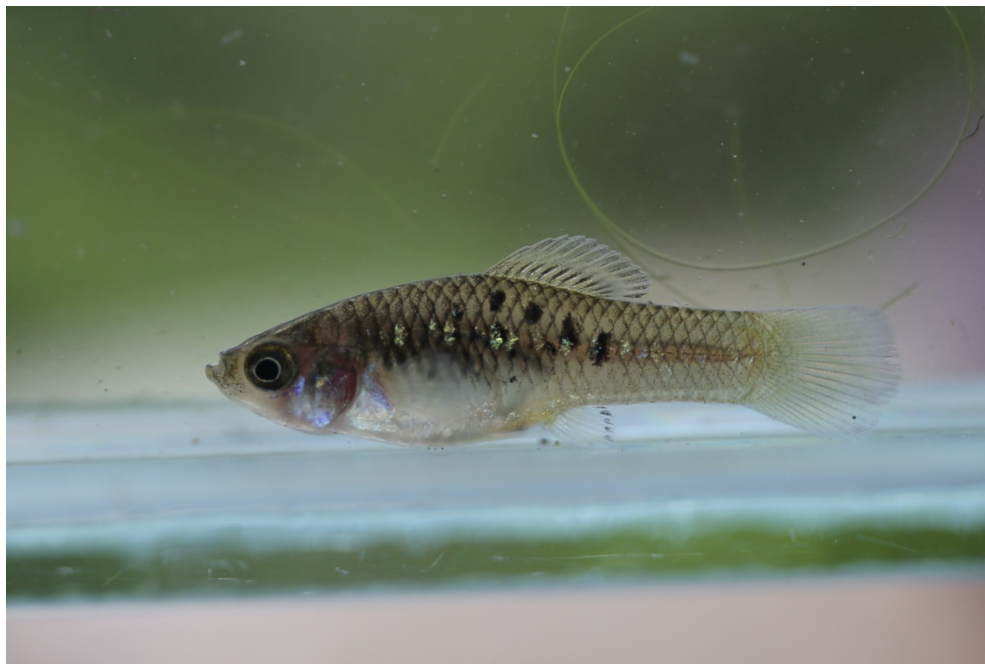
Capacity building for conservation of endangered species of *Xiphophorus* in northeastern Mexico

Markéta Rejlková & Diana Juárez

This was the literal name of the project, which in 2023 brought new impulses into the lives of several people. It also affected a few fish – but whether this was also a turning point for the future of northern platyfish in Mexico, we will see much later.

Northern platyfish

But let's start from the beginning. From the northern platyfish, which are three species: *Xiphophorus couchianus*, *X. meyeri* and *X. gordonii*. The first two are extinct in the wild and have survived for several decades only in aquariums. Not only members of the international project Xiphophorus - Northern Platyfish [1] are beginning to wonder if our aquarium populations will one day contribute to the return of fish to Mexico. And they also wonder what is the current situation of the aquaculture laboratory at the Universidad Autónoma de Nuevo León (UANL) in Monterrey, i.e. in the city where *Xiphophorus couchianus* originally lived and where historical records abound with various platyfish. In the past, breeding and research at UANL were strongly focused on platyfish. After an almost complete change of personnel and a several-year hiatus, interest in the conservation of local fish, including those of the genus *Xiphophorus*, has reawakened there.



1 - One of the *Xiphophorus* hybrids from a river in the Monterrey metropolitan area. (Photo: Markéta Rejlková)

Project for 2023

After UANL's agreement with Ostrava Zoo and Aquarium tropical de la Porte Dorée, a project was created that was financially supported by the European Union of Aquarium Curators, EUAC [2]. Its goal was to establish long-term cooperation, to consult on the possible development of the laboratory focusing on fish of the genus *Xiphophorus*, and also to look around in the field and find out the current state of (former) platyfish habitats. In addition, to take the very first steps towards the

reintroduction of extinct species back into the wild, but slowly... for now, it would be enough to have a thriving aquarium population anywhere in Mexico.

Our cooperation took place at a distance. But the core of the project was two weeks in June, when we worked together directly in northeastern Mexico. The task was to train UANL personnel and students in activities supporting the *ex situ* and *in situ* conservation of four (!) representatives of the genus *Xiphophorus*. In addition to the staff responsible for running the laboratory with aquariums, for teaching students and performing research, we also involved students to motivate them to continue working with endangered Mexican fish.



2 - Joint work in the field. (Photo: Ana Laura Lara Rivera)

UANL laboratory

In this article, we would like to point out some findings from the field, but also present the current state and possibilities of UANL for further contribution to the conservation of northern platyfish. The full name of the facility is the Laboratory of Conservation Biology and Sustainable Development, its "aquatic" part is the Aquaculture and Fisheries Unit. The Centre for Endangered Fish operates there, which has the necessary certification to breed endangered or legally protected fish. Otherwise, it is not even possible, so the idea that "ordinary" aquarists in Mexico still keep in their aquariums the original populations of nowadays extinct species is unrealistic. If someone could do it, it wouldn't be legal.

The laboratory includes an aquarium room with air conditioning and smaller rooms used for breeding live food cultures, quarantine and various scientific and educational purposes. It is first and foremost a university workplace, so students and their development are paramount. The images attached to the article show the state as of June 2023; the laboratory has been undergoing renovation since then. The concrete

vats in the large hall provide a really large capacity, but in the summer it is very hot, which limits the use.

The most interesting species can therefore be found in the air-conditioned room; these include the critically endangered *Xenotoca doadrioi* and *Ameba splendens*, or the endangered *Xenotoca eiseni* and *Xenoophorus captivus*. Other species include: *Cyprinella formosa*, *Goodea atripinnis*, *Xenotoca variata*, *Poecilia mexicana* and *Poeciliopsis viriosa*. We can also find different populations of platyfish (*Xiphophorus maculatus*, *X. variatus*, including some hybrids from the surrounding waters; the designation *X. couchianus* on the two aquariums should be taken with a grain of salt, as they do not correspond at all phenotypically). Work on the development of the collections and the aquariums themselves and their technical equipment continues, the university wants to make meaningful use of its facilities.



3 - Part of the indoor facility at UANL. (Photo: Markéta Rejlková)



4 - The largest part of the laboratory with concrete tanks. (Photo: Markéta Rejlková)

Working with the public

We consider it very important to say that science is not only about research or experiments, but we must also be able to provide our knowledge to the general public. This is a key element in the global change we really need today. Many people do not realize the importance of endemic species or the importance of the role they play in ecosystems. Activities at elementary schools are part of the work of the laboratory and the students. We completed several such classroom activities during our June visit to Múzquiz, the former home of *Xiphophorus meyeri*. Working with the public is very important here due to the desired future reintroduction of the species. At school, we basically tried to explain to the children the reason for our visit and how we can all contribute to the protection of the environment and the species with which we coexist.



5 - Visit to the school in Melchor Múzquiz. (Photo: Markéta Rejlková)

Survey of current, former or potential northern platyfish habitats

The essential contribution of the project was the visit and collection of data from some selected locations in the states of Nuevo León and Coahuila. The sites visited in the Monterrey metropolitan area were: Río la Silla, Guadalupe; Arroyo Santa Ana, Juárez; Manantial de Jardines del Canadá, Escobedo; Arroyo Charco Azul, Cerro de la Silla; Arroyo La Tinta, Bosque La Silla; Ojo de Agua, Apodaca. In the state of Coahuila, we visited the Santa Tecla lagoon in Cuatrociénegas and also several locations in the city of Múzquiz and its wider surroundings. In some places we searched in vain (though thoroughly) for water; in others we spent several hours slowly progressing through the difficult terrain, but found no fish at all. Even so, it was important work. We carried out a thorough survey of where the fish were or where they might once again be.

We measured the physico-chemical parameters of the water to obtain comprehensive information about the habitat, including temperature, dissolved oxygen, conductivity, pH, hardness, etc. In addition, we recorded a detailed description of the present animals and vegetation, substrate, currents, etc., including the surroundings and possible negative influences. We also collected environmental DNA samples at selected sites, which can help us obtain information about species that have remained hidden from us. Where possible, we snorkelled and conducted direct observations and identification of fish in their natural habitat.



6 - Some habitats in the Monterrey area are relatively well preserved. However, drought and invasive fish species pose serious problems. (Photo: Markéta Rejlková)

A description of the detected state of all locations would take up a thin book. But surely you are interested in at least the most important places. So briefly:

Laguna Santa Tecla, Cuatrociénegas – *Xiphophorus gordonii* still thrives at the site. However, the spring pool is practically overgrown with reeds, horses graze on the fenced property and pollute the water. Although the platyfish population looked very good, their living space is rapidly shrinking.



7 - The edge of the original Santa Tecla lagoon. It is already completely overgrown. Horses pollute shallow running waters where platyfish hang out. (Photo: Markéta Rejlková)



8 - *Xiphophorus gordonii* and *Gambusia marshi*. (Photo: Markéta Rejlková)

Apodaca is certainly of interest to many northern platyfish breeders. Yes, the place has changed, there are new swimming pools and overall it's more "artificial". No, a miracle did not happen; we did not find any *X. couchianus* or other platyfish here. Only a few individuals (non-native) *Xiphophorus hellerii* in poor condition. And some tilapia and hundreds of *Pseudoxiphophorus bimaculatus*, a non-native species of livebearer that has taken over the waters around Monterrey, with the exception of mountain streams.



9 - Ojo de Agua de Apodaca. (Photo: Markéta Rejlková)

Santa Ana is the site of the mysterious platy *Xiphophorus* sp. *Regio*. You may have noticed above in the text that we are talking about the conservation of four species of the genus *Xiphophorus*. There are three northern platyfish species. *Regio* is the fourth one, although not yet described and who knows if it will be a good species in the end. Anyway, the location is immensely interesting and seeing with our own eyes the extremely small pool in which an isolated population survives was definitely one of the highlights of the whole project. Site monitoring and further research on these fish continues.



10 - Arroyo Santa Ana is a stream, divided into small pools during the dry season. (Photo: Markéta Rejlková)

Melchor Múzquiz - La Cascada recreational pool, type locality of *X. meyeri*, had a low water level, but was full of fish. For the first time ever, we recorded the occurrence of a non-native species of fish, until now the location was "unspoiled" at least in this respect. The summer appearance of the swimming pool was generally not very optimistic, the key here is a sufficient supply of fresh water from the Socavón spring. Unfortunately, the spring too faces a water shortage. Even many rivers around Melchor Múzquiz were completely dry, only the Río San Juan and its tributaries to the northeast of the city seem promising. But more on that later...



11 - Despite the swimmers, the pool in Melchor Múzquiz is teeming with fish life. (Photo: Markéta Rejlková)

Joint work for the benefit of endangered fish from northeastern Mexico will continue. We are thankful for the support of EUAC, Zoo Ostrava, Aquarium tropical de la Porte Dorée and UANL. Tiphaine Dartois (Aquarium tropical) and Ana Laura Lara Rivera (UANL) provided invaluable help, but also almost two dozen other people who were involved in the project. We hope that, at least for some, this completely new experience has ignited a spark of interest in endangered fish of the genus *Xiphophorus*. Because in Europe we breed northern platyfish [1], but their home is in Mexico and we would like to see them there.



12 - Schools of fish can be found right in the metropolis of Monterrey. However, here, in addition to tetra *Astyanax mexicanus* and hybrid platyfish (*Xiphophorus* sp.), there are also numerous non-native livebearers *Poeciliopsis gracilis*. (Photo: Markéta Rejlková)

[1] <https://www.conservation.oevvoe.org/en/xiphophorus-northern-platyfish>

[2] <https://www.euac.org/conservation-programmes>

Diary dates

We are planning on holding four meetings next year. Full details will, of course, be on the British Livebearer Association website but the basic outline is:

1. Spring show

Bristol, April 21st
Hengrove Community Centre
Fortfield Road,
Bristol,
BS14 9NX

2. Summer show #1

Hampshire, June 2nd
Kempshott Village Hall
Pack Lane,
Basingstoke,
RG22 5HN

3. Another summer show

Cumbria, July 7th,
Harraby Catholic Club,
Edgehill Road,
Carlisle,
CA1 3PQ

4. Autumn Convention

Midlands, September 21st/22nd
Shenstone Village Hall,
Barnes Lane,
Shenstone (Near Lichfield),
WS14 0LT

I hope to see you at some, or even all, of these events.