Livebearer News

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CONTENTS

Data Protection Act

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

Editorial

One of the privileges of the job of editor of the newsletter is that I get to decide what goes into it! As a bird-watcher as well as a fish-keeper with a special interest in *Goodeids* it is no surprise that I am interested in conservation. I must admit that I have gone on a bit in the past about the role that we as keepers of livebearing fish species could play in the conservation of those species. I hope that I haven't overdone it this time though. I have included a summary of a scientific paper which tried to argue that the influence we have on aquatic conservation is not completely negative. I would be very interested to hear what you think about the article and the subject of fish conservation in general. I will include any feedback in future newsletters.
Speaking of which; I am very short of new material for future newsletters [i.e. I don't have any new material at all]. So come on – get writing! Any topic at all. Don't worry about your spelling or anything else along those lines as I will make corrections if you like.
I usually include all the "thank-you"s in the editorial but this time there were too many so I have done them as a separate section.

Thank you

I'd like to start by thanking J. Sara Fulton for sending me her photos of the fish in her tanks. Once again, I wish I knew the secret of taking good fish photos. I'd like to continue by thanking Alan Rothwell for his letter describing his recent woes. A big thank you goes to Markéta Rejlková for sending me her article about her visit to the Presa Cointzio in Mexico. She not only sent me an English translation of her article but she also sent me a zip file with her photos and the captions for them.
Another big thank you goes to Dr John Lyons for sending me a copy of the article that he co-authored for the "Fish and Fisheries" scientific journal. Dr Lyons was then kind enough to check my summary of the paper and correct my factual, spelling and typographical mistakes!
I must thank new contributor Tim Caroen for his photos – again much better photos than I ever managed and of interesting species too. I have never even seen *Gambusia hurtadoi*.
Thanks also to Clive Walker for his article and photos about *Xiphophorus cortezi.*
I'd like to thank Sara again for the *Phallichthys tico* that she gave me [and Steve Oliver who added some more]. These are delightful little fish and are worth an article in their own right.
I will also take this chance to say thank you to Dr David Pool (of FishScience), Steven Spenser (of Aqualife Leyland) and Pete Liptrot who works at Bolton Museum Aquarium. [See below]. The final thank you must go to Pat Lambert for giving the BLA permission to re-print old articles by her son Derek, one of which I have used in this newsletter.

What are they? *By Greg Roebuck*

That tank needs cleaning! What is that on the inside of the glass? Little white things that have gathered in the current caused by the bubbles from the sponge filter. Take a closer look. They look like miniature sea anemones! Oh! I know what they are – hydra!! Oh ******. Where have they come from? What do I do about them?

So I emailed Steven Spenser at Aqualife Leyland and Dr David Pool of FishScience. No immediate reply of course as they were both working. So I phoned Pete Liptrot at Bolton Museum Aquarium for advice. He recommended “Anti Fluke and Wormer” from **NTLabs** so I went straight out and bought some and it worked. The only problem is that the hydra keep popping up in other tanks. Both Dr Pool and Steven Spenser emailed me with their own recommendations which I will try when the NTLabs stuff runs out. Once again, many thanks to Pete, Dr Pool and to Steven Spenser.

Are we “green”?

We keep livebearing fish, that’s why we are members of the BLA; yes? But are we “green”? That is, are we good for the environment? Does our hobby [obsession?!] harm the environment? Do we do more good for the life on Planet Earth than harm? Big questions! I like to think of myself as an environmentalist. I like to think that I am contributing to the conservation of life on Earth with my fish-keeping but others don’t see it that way. The conservation of the big, charismatic species, such as tigers, elephants, pandas and whales gets lots of attention. But these animals are only a small number of species whereas thousands of species of fish are in trouble. Is it our fault? Are we the “good guys” or the “bad guys”? I had always thought of myself as one of the good guys but to my surprise, many active conservationists consider me, as a fish-keeper, to be one of the bad guys.

In the December newsletter I included an abstract from a paper in the scientific journal ”Fish and Fisheries”. Dr John Lyons of the University of Wisconsin saw the newsletter and very kindly sent me a copy of the entire paper. [Dr Lyons was one of the authors.] What follows is a summary of the paper and a few of my own thoughts.

The aquarium hobby is popular worldwide, but it has positives and negatives for freshwater fish conservation. The most damaging impacts of the aquarium trade on ecosystems are overharvesting and invasive species. As a result, many conservationists and academics believe that aquarium hobbyists are generally harmful to species conservation. I can understand this. For example, several species of cichlid have been released into the waterways of Florida and have competed successfully against the native sunfishes, reducing their numbers. Various “plecs” have been released in, for example, the waters of Thailand and have bred very successfully to the detriment of various other catfish. At a talk at a fish-keeping meeting I heard that some of the rivers in the Amazon are now nearly life-less. So many tetras, especially cardinal tetras, have been harvested the food chains of the rivers have collapsed, to the detriment of larger fish species, birds and crocodiles. The paper contends that aquarium hobbyists do have positive effects; that they and their associations can directly assist with scientific research, increase conservation awareness among the general public and collaborate with legal authorities and conservationists to diminish the risk posed by introductions. Aquarists can also participate in *ex-situ* and *in-situ* conservation programmes for fish species at both national and international levels.

Overharvesting and invasive species: Is the aquarium hobby responsive?
The aquarium hobby is now very popular world-wide and currently over 1 billion fish comprising more than 5300 freshwater fish species are traded internationally each year. Collection of wild fish for the trade has led to overharvesting and habitat destruction. Escapes and deliberate releases of aquarium fish into habitats outside their native range have contributed to the problem of invasive species.
In the past many popular aquarium species were captured from wild populations, but at present 90% of freshwater aquarium species are captive bred. As an aside, the paper states that for some rare species, captive-breeding programmes to supply aquarium demand have produced a surplus of specimens for reintroduction programmes in the wild. In a survey of aquarium fish retailers and wholesalers in south-western Europe, 1133 fish species were listed and all of the 13 species that were formally classified as endangered or threatened with extinction in the wild were captive bred rather than wild caught. The threats to survival in the wild for these species did not include excessive harvest for the aquarium trade but rather encompassed other commonly recognized threats such as habitat degradation, introduction of exotic species and overfishing for human consumption. Examples included :-
The introduction of exotic species (not from the pet trade) causing the decline of the spotted danio (*Devario pathirana*), the Asraq killifish (*Aphanius sirhani*), the Potosi pupfish (*Cyprinodon alvarezi*) and the Red-tailed sharkminnow (*Epalzeorhynchus bicolour*);
Siltation causing the decline of the Ocellated shell-dweller (*Lamprologus kungweensis*);
Over-fishing for human consumption causing the decline of the Pinstripe damba (*Paretroplus menarambo*);
Over-fishing for human consumption and the construction of dams that blocked migration routes caused the decline of sturgeons (*Acipenser species*).
However; the lack of data means that it is still possible that some rare species are being over-fished for the aquarium trade.
The survey mentioned above found that the aquarium hobby generally obeys laws to reduce over-harvesting or stop the import of invasive species. Aquarium hobbyists have made several positive steps regarding the conservation of fish species. One positive step here was the educational video put onto “Youtube” by the Seville Aquarium Association about not releasing non-native species. Several aquarium societies have put together databases containing information on the biology, ecology, distributional range and behaviour of many fish species. This information can be valuable for conservation, especially considering that 300 of the 1133 fish species mentioned in the survey above were found only in the aquaria of members of specialist hobby associations (mainly livebearers, cichlids and killifish). The paper mentions “Cat-eLog” which has data-sheets on more than 3000 catfish species and includes 14000 images and videos.

Aquarium hobbyists often contribute to the development of basic knowledge about the biology and ecology of species through the technical notes and reports they publish in journals including “Practical Fishkeeping”, on websites or in aquarium association bulletins such as this one. Quote :-“Unfortunately the scientific rigour of this information is often uncertain”. My own opinion here – at least it is information. Many of the hobbyists that I have spoken to at BLA or BCA meetings have a vast

wealth of knowledge of the species they work with.] The paper does acknowledge the exchange of information at hobbyist meetings and at joint hobbyist-scientific conferences. For example, several hobbyist associations have participated in the International Symposium on Viviparous Fishes that was formerly held biannually in Mexico.
The paper also recognises that hobbyists can play an active role in applied conservation. Quote “the populations of fishes maintained in captivity through networks of devoted aquarists provide a germplasm reservoir to prevent total extinction of the species and to develop re-introduction programmes. Examples of ex-situ conservation programmes include the crescent zoe (*Zoogoneticus tequila*) and the golden skiffia (*Skiffia francesae*), whose populations had been kept by private aquarium hobbyists for 25 years.”
Private aquarists also participate in the assessment of populations of some species. The paper gives the examples of *Aphanius iberus* and the Valencia toothcarp (*Valencia hispanica*) in coastal lagoons in north-eastern Spain. However, I also know personally of the members of the Goodeid Working Group surveying populations of Goodeids in Mexico. When I was with the GWG in Mexico in 2016 we found a single male *Allodontichthys polylepis* in the Rio Dávalos where it had not been found for fourteen years and was considered extinct there. Thanks to similar aquarium hobbyist expeditions, species considered extinct by scientists, such as the black-spot allotoca (*Allotoca maculata*) and the Ameca shiner (*Notropis amecae*) were re-discovered. Also, the declining conservation status of fish species in arid areas of Mexico, such as the black prince goodeid and rainbow goodeid (*Characodon audax* and *C.lateralis respectively*) was brought to the attention of scientists and conservationists. These expeditions are generally funded by the hobbyists themselves, as are the ex-situ conservation efforts of the hobbyist groups.

Aquarists and hobbyist groups can also help scientists in their work. The paper gives the example of Indian aquarists accompanying scientist from the Natural History Museum of London on field trips which discovered new species including a catfish *Pseudolaguvia lapillicola*. Another example quoted was the goodeid *Zoogoneticus purhepechus* which was scientifically described based on specimens collected by Poecilia Nederlands. Aquarists have also recognised and provided the information for scientists to describe new species of fish. The examples quoted include the killifish *Aphanius saourensis* and *A. sirhani* . [The first of these is extinct in the wild and being maintained largely by hobbyists.]

There have even been cases where taxonomists have named newly-discovered species of fish in honour of aquarists. One example quoted is the cichlid *Enigmatochromis lucanusi* named by Anton Lamboj after Oliver Lucanus.

Hobbyists also contribute to scientific knowledge by the development of databases of ichthyological information. I can recommend the website of the Goodeid Working Group in this respect.

Various hobbyist organisations also contribute funds to conservation groups. One example here is the donation by the BLA of cash and equipment to the Fish Ark Project / Hobbyist Aqualab Conservation Project at the Universidad Michoacana in Mexico which our own Ivan Dibble helped to start. Currently the FAP and others

such as the GWG successfully keep populations of the 12 most endangered or extinct-in-the-wild goodeid species and 24 other species. Several American hobbyist groups also fund conservation efforts. Other similar projects are aiming to conserve *Paraosphremenus* species and Lake Victoria cichlids.

So where do we go from here? Obviously I am biased as keeping fish is my hobby and I want to keep on doing so. However, there are organisations out there who want to ban the keeping of any wild animal, including fish. There have been calls to ban the import of any species of fish into the UK. This would devastate our hobby. To counter this we can emphasise our “green” credentials. We can attempt to educate people about the need for aquatic conservation. We can donate to conservation organisations. In fact, we already do this last one. £1 of our £6 membership subs goes to conservation projects. The Aquarium at Chester Zoo and Tropiquaria in Somerset are both involved in goodeid conservation through captive breeding. Tropiquaria hold more species of goodeid that any other body in the UK and the most in Europe after the Haus des Meeres in Vienna. Neither Chester Zoo nor Tropiquaria can receive visitors at the time of writing due to the Covid 19 situation. The BLA proposes to make donations to both organisations and individual members could do the same.
For the last couple of years, the BLA has been promoting the keeping and breeding of *Zoogoneticus tequila* with the aim of distributing the species as widely as possible in the UK so that fish can be sent to the re-introduction project if necessary. Could we do the same with other species? Which species? No-one can save all the endangered species of fish in the world but we could all help to conserve at least one species and that would make a big difference overall.

So what do you think? What should we do to enhance our “green” credentials? I look forward to hearing your views on this subject.

Forgotten Rainbows

During the time I was writing the summary of Dr Lyons' paper I was also clearing out some (very) old copies of "Practical Fish Keeping" magazine and came across the article below in the February 1992 issue. It was written by Derek Lambert who was the driving force behind the Livebearer Information Service and whose mother, Pat Lambert, very kindly gave us permission to reproduce Derek's old articles in the "Livebearer News".

DEREK LAMBERT looks at a popular livebearer which is frequently left off the retailer's stock list.

A pair of C. lateralis *– Red Rainbow Goodeids*

N.B. This is a scanned copy of the original black-and-white photo.

The Rainbow Goodeids are a small group of fish which are extremely popular among livebearer enthusiasts. The genus comprises of only three species, of which two are readily available within the hobby although hardly ever stocked in aquarium shops. The first species to arrive in the UK was *Characodon lateralis* – the **Red Rainbow Goodeid** or **Rainbow Characodon.**

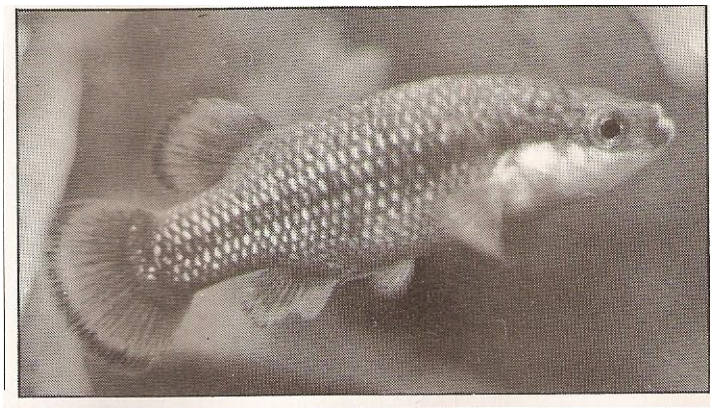
This is a slender torpedo-shaped species, with both the dorsal and anal fins set well back on the body.

The male pictured (right) is about twelve months old and has reached his prime. The body is a deep blood red colour overlaid with green spangles. His belly and throat are yellow. A darker lateral stripe runs from the mouth, through the eye, to the caudal peduncle. Some specimens have large black spots or blotches on the sides. All the fins are red near the body, paling to yellow, edged in black.

The female is green with a line of black spots along the lateral line. The number and size of these vary from individual to individual. All the fins are clear to greenish.
This is a very shy and retiring species which must have plenty of plant cover to feel secure. However, they can be kept in a community tank of similar-sized fish. A temperature of 70 - 75°F [21 - 24°C] is ideal.
The two most important factors in breeding this species are water quality and diet. At least a 50% water change needs to be carried out every other week or a very good filtration system employed, with smaller partial water changes.
If possible their diet should consist of predominantly live food with the occasional addition of some green vegetable matter such as peas or spinach.

Breeding

For breeding, two young pairs should be placed in a large well-planted tank and fed on as much live food as possible.
The gestation period is, on average, eight weeks and the fry are large at birth.
The brood record for live fry from a single isolated female is only 27, so this is not a particularly prolific species.
When the fry are born the adults may leave them alone and you will have established your breeding colony.
Sometimes, particularly with older females, the fry will be attacked and killed. If this happens, save as many of the babies as you can and place them in a small tank for rearing. After about a month they should be large and strong enough to be returned to the breeding tank. Once the adult fish are used to having small babies with them they leave even the new-born ones alone.



This male is about a year old and in his prime. N.B. *This is a scanned copy of the original black-and-white photo.*

The Black Prince

The next species to be imported to the UK was *Characodon audax* – the **Black Rainbow Goodeid, Black Prince** or **Bold Characodon**. This is a slender, torpedo-shaped species similar to the Red Rainbow Goodeid with both dorsal and anal fins set well back on the body.
The male pictured is a young fish approximately five months old. The body is greyish in colour, paling to creamy pink on the belly. The sides are overlaid with iridescent silver scales and the gill plate (*Operculum*) is a shining sky blue. The fins are jet

black near the body becoming clear near the edges. The female lacks the silver scales and black fins of the male and is very similar to the female Red Rainbow Goodeid.
Unlike its red cousin this species is a bold fish, spending most of its time swimming around at the front of the aquarium once it has become used to its home.
If too many fish are housed in the same tank fights often develop which may lead to the death of some of the protagonists. Similar behaviour has been noted when this species is fed too little or poor quality food.

Breeding

Aquarium maintenance should be the same as for other species in this genus, although breeding them as a colony is more difficult.
Often it is best to remove the pregnant female to a small tank on her own for the last few weeks of pregnancy so that the babies have the best chance of survival possible. The female can then be given a few days on her own to recuperate before being returned to the main tank.
The fry grow well on a mixed diet of live and flake food with some vegetable matter for roughage. They are sexable at two months old; however, it is nearly four months before the males are sexually mature.

A male C. audax, the Black Prince N.B. *This is a scanned copy of the original black-and-white photo.*

Extinct species

A third species in this genus was *Characodon garmani*, Parra's Characodon, which is thought to have become extinct in the early 1900s due to a combination of development for agriculture plus domestic and industrial pollution.
Unfortunately, Red and Black Rainbow Goodeids are also in danger of becoming extinct in the wild.

The Black Rainbow has only been collected in the outflow of El Ojo de Agua de las Mujeres at El Toboso, in the State of Durango, Mexico. This limited habitat is obviously very vulnerable and gives rise to this species being listed as a threatened fish by the American Fisheries Society.
The Red Rainbow has a much wider distribution, but has seriously declined in abundance and distribution over the last 30 years and is also listed as threatened.
In 1979 the American Fisheries Society listed 251 fish of Canada, America and Mexico which warranted protection because of their rarity. In the latest list published in 1989 the number had risen to 364 but many others may also need to be listed once more information has been gathered.

Editor's note 1

Derek went on to say that he would be taking part in an Endangered Species Survey in Mexico, sponsored by "Aquarian" – "while you are reading this article".

Editor's note 2

Since 1992, when this article was published, *Characodon lateralis* has declined further and is now extirpated at most of the previously known locations. In the meantime, a number of new populations of *Characodon* have been discovered. These have blurred the distinction between the species. I have just spent half an hour reading about the different populations on the Goodeid Working Group website with a view to summarising the information. In the end, I came to the conclusion that it is better if you look at the website of the Goodeid Working Group yourselves!

A tale of woe *by Alan Rothwell*

Last week I was in my fish house as usual checking out my fish and I had a 30 x15x 12 inch tank which was full of *Zoogoneticus tequila* and a new batch of fry along with four adult *ancistrus* cats. I have kept these going for thirty years ever since Derek Lambert first collected them. The following evening I went in my fish house and everything in the tank was dead. I can not figure out any possible explanation for this at all, the water was crystal clear and had no smell to it. The last water change I did was a week before but that involved twenty tanks and no other fish were affected so it could not be that. In the 58 years I have kept and bred tropical fish the only time fish have died on me that fast was when they were poisoned with aluminium sulphate which Severn-Trent water put in the water supply which wiped out half my fish house. In all the years I have kept fish I have had many successes and many failures. But this is the first time I can not even begin to figure out what went wrong.. Oh well, get some more and start all over again !
All the best hope for a better New Year.
Alan Rothwell

A tale of woe II *by Greg Roebuck*

Sat 6th Feb – Spent a couple of hours in my fish room, did plenty of water changing, fed the fish flake food morning and early evening. Later in the evening took out three blocks of frozen fish food, bloodworm, *Artemia* and Cyclops and most tanks received a little of each.
Sun 7th Feb – into my fish room at 8 am . I have an unheated four foot tank divided into three sections and the middle section which I use for *Zoogoneticus tequila* hold a nasty surprise. All the *tequila* are dead. None of the fish in the two outer sections have died. What could have caused this? Stop and think. Remember the talk that Dr Pool has given to the BLA a couple of times. When all the fish died suddenly it is the water quality which is at fault, even though it is only three days since I did a 30% water change on that tank. What could have caused this? All I could think was ……
If I put too much flake food in during the evening feed and so the fish didn't need or want the frozen food then the frozen food would have rotted overnight and released a lot of toxic ammonia. So I got out the test kits and tested the water of that tank for ammonia, nitrite and nitrate. The ammonia reading came in at 0.1 mg/l – not ideal but a long way short of what would normally be lethal. The nitrite and nitrate readings both came in at close to zero. I decided that the test kits were old and had probably underestimated badly the ammonia or nitrite levels and it must have been one of those that killed the fish.
I then spent a large part of the day cleaning out the affected tank and doing very careful water changes on two other tanks.
One saving grace. I have some fry from the *tequila* in another tank and can start again trying to build up the numbers of this highly endangered species.

A tale of woe III *by Greg Roebuck*
Sometimes I am an idiot!
Mon 8th Feb :- no further deaths in any tank. All fish are fed flake food, no frozen food and the young fry get supplementary newly hatched brine shrimp.
Tues 9th Feb :- All fish were fed fake food in the morning and again in the afternoon. All looked OK. Two hours after the second feed I give some fish some frozen *artemia*.
A couple of hours after that I checked on my fish room and all my *Skiffia multipunctata* were either dead or dying as were a few fish in other tanks. I should have thrown the frozen artemia away after Sunday's events. It is now in the bin.

Lake Cointzio, Michoacan, Mexico

By Markéta Rejlková

On February 10, 2010, we found ourselves on the south bank of the Cointzio reservoir: Milan Murko, Milo Pešek, Roman Slaboch and me. It was the only place where we found *Neotoca bilineata* that year. Very nice fish, for me personally perhaps the most beautiful goodeid – and the second adept to win my personal rankings was here coincidentally too, so I remember this place very well. I have never written about it before and did not share photos, but now I want to take you back eleven years and see this interesting place.

La Presa de Cointzio. The dam lies somewhere in the distance on the opposite side, from here it is not visible.

Everywhere around, the soil is red. Hence the turbidity of water, which is formed by a very fine clay particles.

In our travel diary from 2010, Presa Cointzio has the serial number fifty - we have managed to explore so many locations in the past almost three weeks. Our expedition is almost over, we are already moving towards Mexico City. We are now near the city of Morelia, on the eastern edge of the goodeids distribution range. We already function as a well-coordinated team: we find access to water, search for fish, try to catch them, take photos, measure water parameters and write down notes. The diary therefore reads: February 10, 2010, 5 pm, pH 7.30 and conductivity 169 µS / cm. Air temperature 27.2 ° C, water temperature only 15.7 ° C. These numbers correspond exactly to the data given from here in official sources, maybe we were just lucky with warm weather. The level of the dam reservoir is at an altitude of 2000 m, so it is generally colder here than we usually imagine for Mexico.

The strongest impression from this place is that the water was completely cloudy. The shores are gradual on the south side, there is a lot of garbage and other traces of fishermen on land. So there are supposedly some fish here; the question is, are there any small fishes for us, weird gringos with fishing nets and photo tanks wandering around? I am attaching a large picture of cloudy water, because this is exactly what we saw. Fish? Perhaps. You rarely try to catch anything without even seeing some movement in the water.

In the end, we got the catch and it was worth it. The skiffias were really beautiful, big. But also all the other fish had one thing in common: they were shiny. This does not mean that they were particularly nicely colored, for example Allotoca dugesii from other places can certainly be more intensely colored. But the fish from Cointzio had conspicuously glittering patches, especially on the operculum.

I have no doubt that this has to do with turbid water. It's hard to imitate this at home, but it's definitely worth paying attention to. We can only come close to such conditions with green water and it has been confirmed to me (and not just me) that the fish kept in green water have more shiny appearance. It's probably related to sunlight, too, although such cloudy water appears to be very little transparent to light. I definitely do not advise you to start immediately to keep fish in green water or try to cloud it in other ways, it all has its negative sides. But if we are trying to understand natural conditions and how different habitats affect fish, water turbidity is an important factor. Not all fish are adapted to orient themselves visually in clear water, and a little shine on the operculum is quite a simple help, not to be completely alone in such a huge body of water, until until you literally bump into each other with another fish.

After all, see it for yourself.

I could end our trip to the Presa Cointzio here. We documented what it looked like on a particular small piece of shore that day, and we went away. As a historical snapshot, our report is certainly valuable, but I will add context to it. Now that we know the place, we can return there at any time, at least virtually, and remotely watch how it develops and how people live in the area. And also read a few numbers: the area of the reservoir is said to be between 350 to 430 hectares, it has a capacity of about 70 million cubic meters, a depth of 27 m, mixing of the water

column takes place once a year, the oxygen content in winter at a temperature of 16 ° C is 7.7 mg / l (79% saturation). The water has low salinity, mineralization and alkalinity.

Cointzio is located just a few kilometers from Morelia, the capital of the state of Michoacán. You could hear the state name in connection with the so-called drug war, since 2006 it has been a little wild here, but imagine an otherwise peaceful, relatively densely populated agricultural landscape. In recent decades, villages and towns have grown rapidly, hand in hand with the expansion of agricultural land, especially pastures. Deforestation leads to landslides into the dam reservoir, public institutions are trying to regulate land use, but desperately slowly. La Presa de Cointzio, as the official name of the reservoir sounds, repeatedly fights sediment clogging. But not only that.

The dam serves as a source of drinking water for Morelia, where about 40% of the population depends on it, i.e. more than 300,000 people. About a third of the water reserves are used this way, the rest is used for irrigation for the surrounding agricultural areas. There is also a small hydroelectric power plant. The dam also plays an important role in flood protection. The local climate is quite special and water is the number one topic.

In Michoacán, 90% of the rain comes between June and October, mainly in August and September. At the beginning of this period, the reservoir is half-empty. In the autumn, on the other hand, water is usually partially released to keep some free capacity to catch the last rains. For example, in October 2018, the capacity was filled to more than 99% and it was necessary to drain the water to the unlucky quarters of Morelia, at that time already flooded due to heavy rains. This is not a rare phenomenon, autumn can be really rainy here. Then came the very dry year of 2019, and at the beginning of the rainy season in 2020, it was a sad look at the Presa Cointzio. In July, the reservoir contained only 28% of water, a historic minimum. In October, when the dam should almost overflow, it was still only 70%. Now it will not rain again until June.

Do you think it's annoying? The hundreds of thousands of people who depend on Cointzio's water do not have an access to it every day. Last summer, it was available in households every third day for six hours. Despite this brutal saving, water is scarce, the surrounding agriculture is largely dependent on irrigation, and droughts will be more frequent in the coming years. Of course, up to 40% of the water from the supply network is said to be lost somewhere in the ground through a cracked pipe, which is also a part of the reality.

Then there is another factor, increased eutrophication. In recent years, about half of the Presa Cointzio surface area is covered by Eichhornia crassipes (water hyacinth), which is an unprecedented thing. Half - because in recent years, from the end of winter until the rains come, dozens of people, machinery and money are used to remove the plants at least in part, otherwise the entire tank would be covered and dead. Water hyacinth clogs the water ways, prevents the penetration of light, reduces the amount of oxygen in the water and also increases water loss with its evapotranspiration (three times as much water as is evaporated from the same area of open water). It is an annual costly and futile fight, and a real invasion.

Visibility is in units of centimeters. Turbidity may change during the year, but it is always there.

Milan, Roman and Milo observe the fish in the photo tank with obvious satisfaction.

Neotoca bilineata. Male above, female below.

Goodea atripinnis. It's such a gray mouse in many places, but not here.

Allotoca dugesii, two females. And they say goodeids are ugly!

Allotoca dugesii, male. He is usually smaller with golden sides, sometimes greenish.

Gambusia sp.

We only need the last piece to illustrate the situation: a celebratory announcement in the local newspaper that in October last year, the construction of a wastewater treatment plant was started in a small town on the banks of the Presa Cointzio. Hooray, it will then be possible to either drain the water into the reservoir or use it for irrigation. And I'll just ask cautiously: what have they done with that wastewater until now?

Ever since I began to perceive fish as an integral part of their environment and to be interested in their stories, I have appreciated them a little more. I believe that after this trip, you will understand.

Female *Neotoca bilineata.* Photo :- By Markéta Rejlková

And once again *Neotoca bilineata*. Its species name means two-striped, and here we can see two black stripes, which are separated by a lighter line. In the female on the first photo, the black pigment is largely covered by shiny chromatophores.

Musings from the fish room

Skiffia sp “Sayula”; *Photo :- Sue Roebuck*

Which species do I want to try and keep long term? First would be *Skiffia* sp “Sayula” [pictured above]. Why? Back in 2016 I went with the GWG team to Mexico and we visited the one pond where this fish had been found. The pond contained bass and tilapia but no *Skiffia*. I don’t know whether it is a separate species in its own right or a form of either *Skiffia francesae* or *S. multipunctata* though it looks different to either of these. Knowing that this form is extinct in the wild is a big motivation to keeping it long-term.
Second would be *Chapalichthys pardalis*. Why? Along with *Ilyodon “xantusi”* this was the first *Goodeid* that I ever kept and the first one that bred for me, about 36 years ago.
Third would be *Zoogoneticus tequila* as I like the look of this species and I enjoy being part of the BLA group trying to build up numbers of this fish.
So what is your choice of species to keep long-term? It is not compulsory and it is not everyone’s way of enjoying their fish-keeping but it could help to save a species from extinction.

Photos from Tim caroen

Gambusia hurtadoi, female. Photo *Tim Caroen*

Phallichthys tico, two males sparring / displaying. Photo *Tim Caroen*

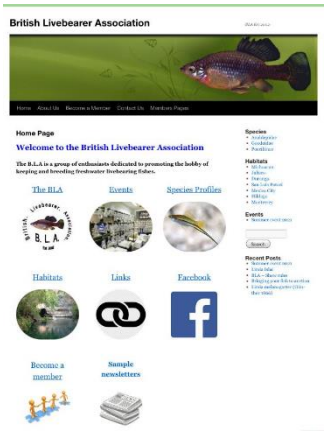
Xenophallus umbratilis, male. Photo *Tim Caroen*

P. quadripunctatus, female. Photo *Tim Caroen*

Heterandria Formosa, male. Photo *Tim Caroen*

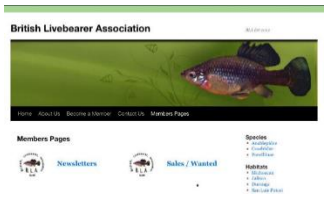
BLA Website

Most you will be familiar with the website. I know many of you will have used it when you became a member.



We have recently had a go at bringing it upto date and trying to make it a more useful tool for you to use.

The first thing you will notice is that the home page is very different look about it. The overall appearance has not changed, the difference you will notice is the use of labelled pictures that are linked to the appropriate pages you are looking for.



The other major change is the new members area. Registration and log in are at the bottom of all pages. Once logged in you will have access to the back catalogue of newsletters and the sales/wanted page to start with. Other pages becoming active some time in the near future.

The species profiles pages are starting to be populated, but there are huge gaps at the moment. If you Are looking for Goodeid information, if you follow the menu to your particular fish this will bring up the relevant page on the Goodeid Working Group site. This isn't a cope out, but as you know we work closely with the GWG and their pages are excellent and extremely informative as well as being fully upto date.

Greg is at the moment promoting the 'sales/wanted' page, to trying to get more our members to let him know of fish you have for sale and fish you are after for his page, we can add these to the website page. If you would like your sales/wanted added, please let Greg know and we can update the page accordingly.

Xiphophorus cortezi *by Clive Walker*

I bought a trio of X. *cortezi* in the Viviparous auction that was held at the Festival of Fishkeeping at Bracklesham Bay in 2001 or 2002.

It turned out that I had a reverse trio, two males one female; the subordinate male was soon moved to another tank after being constantly chased by the dominant male who was slightly smaller but had a sword.
The pair had a 30x12x12 tank to themselves and after a couple of months or so they stopped eating their fry and the population increased. The group were later moved to a 30x12x15 which they shared with *Zoogonecticus perhepicus* (Lake Chapala).

I found the males to be very aggressive with each other. Some males don't develop a sword until they are larger than the dominant male, they then start to grow a sword and attack the dominant fish and may kill him. On one occasion there were two large unsworded males in the tank ; I discovered both dead one morning having succeeded in killing each other. The old dominant male was beaten up but recovered. I learnt to remove old dominant males before the fighting began.

After moving in 2008 I built a fish house. The *Cortezi* went into a 48x12x18 that I'd been given, when after a couple of years this split, they went into a 43x16x18 (Brian didn't have any bigger glass) where they still remain.
Behaviour changed with more space; there would be a number of territories each containing a 'dominant' male. No more fighting to the death, although plenty of sparring.

The Cortezi clade includes *X. cortezi*, *X. malinche* and *X. birchmanni*.

According to Ted Coletti's articles on the *Xiphophorus* group, swordtails have between one and five markers on the genome, (dependent on species), which determine the type of male that that particular fish will become. *X. cortezi* have two markers, what I have observed is slightly different, but almost certainly not scientific.

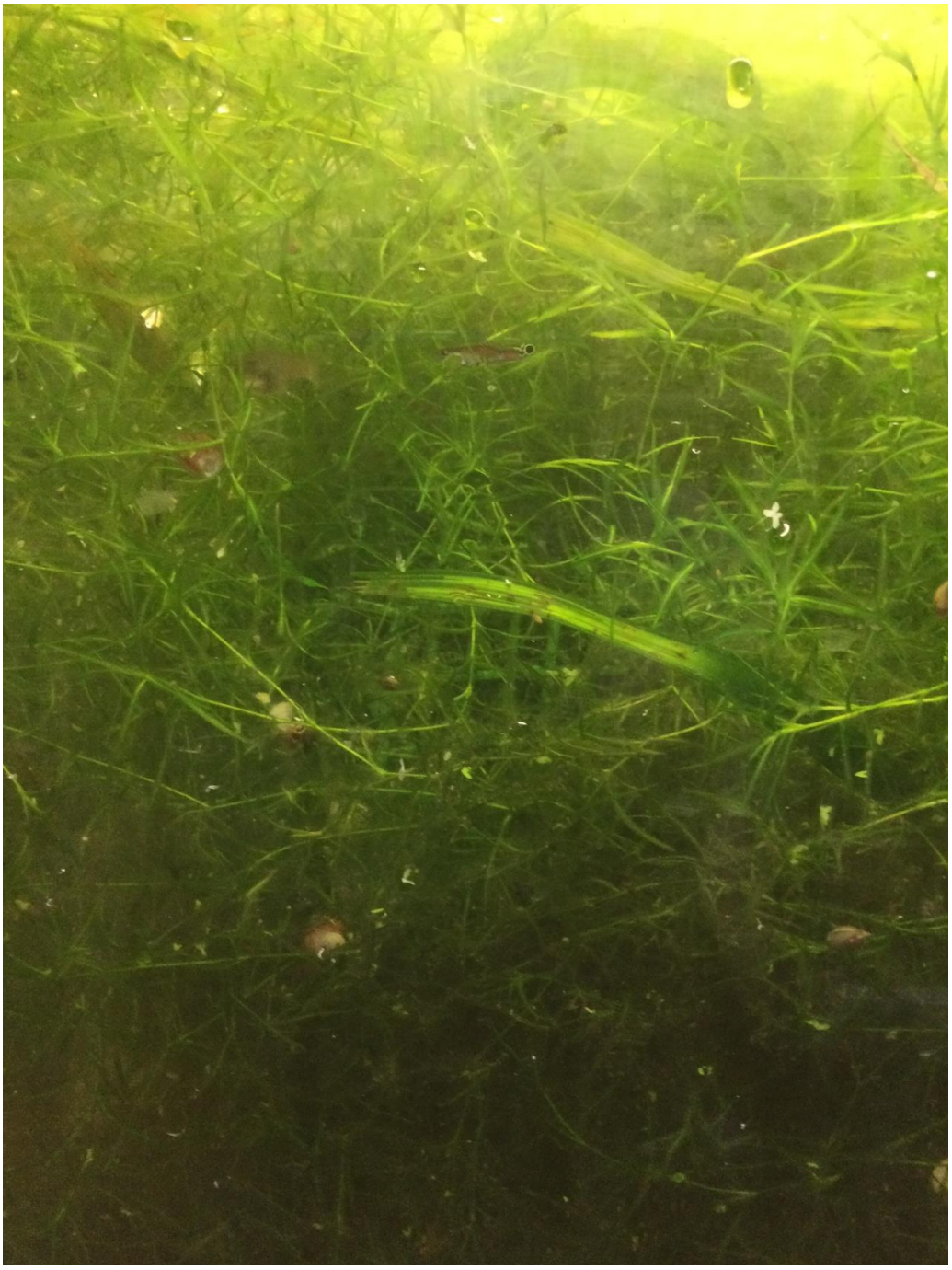
There is the 'basic' male which grows to around 50mm and has a sword of 10-30mm, though 30mm is rare. 'Giant' males which can grow to 70mm and have a short sword around 10mm. They are also much deeper in the body and have a *birchmanni* look about them. Very occasionally there are 'mini' males only growing to 25-30mm but with a 15-20mm sword.

These swords need lower temperatures; today [12/02/21] they are at 16°C, [61°F]. In the summer the door and windows of the fish house are open and in 2018 the temperature went up to 27°C, [80°F]. This was I think too hot for them but fortunately I didn't have any losses.

They are predatory on their young. If you are 'Flock' breeding have plenty of plants in the tank and a layer of coarse gravel. The fry hide in the gravel and seem to spend more time at the bottom of the tank rather than the top.

They are very fast moving and catching them is difficult, so is photographing them! The male in the photos is around 50mm, also shown are two young females and a young male (nearest the bottom of the tank).

Xiphophorus cortezi [Pair]: Photo *Clive Walker*



The planting in the tank containing the *X. cortezi*. Photo : *Clive Walker*

X. cortezi [Male] Photo : *Clive Walker*

Xiphophorus cortezi [Pair]: Photo *Clive Walker*

Photos from J. Sara Fulton

Pure Black metalhead guppy, male . Photo :- *J. Sara Fulton*

Pure Black metalhead guppy, male . Photo :- *J. Sara Fulton*

Photo :- *J. Sara Fulton*

Skiffia multipunctata fry *Photo : J. Sara Fulton*

Gambusia vittata, pair, male above Photo : *J. Sara Fulton*

Gambusia vittata, female Photo : *J. Sara Fulton*

Gambusia vittata, pair, female below. Photo : *J. Sara Fulton*

For sale and Wanted

John Beckett wants to get hold of female *Neoheterandria elagans*. If you have any to spare his email address is :-
john.beckett55@hotmail.co.uk

Brian Dent would like to get hold of female *Gambusia vittata*. If you are keeping and breeding any of this species and have some that you could pass on to Brian, his email address is :_
brian_dent@hotmail.co.uk

Natalie Field would like to get hold of female crystal / pineapple platys and also *Limias* of any species. She would also like to find green dragon bristlenose catfish . She is in postcode WD6
If you have any of the above that you cold give / sell to Natalie, please contact her at :-
natalie.field@gmail.com

John Cooper wants Celebes halfbeaks and any other livebearer that will thrive in soft, acidic water. If you can help John with any of this, his email address is :-
johnfcooper@sky.com

Steven Galloway wants *Skiffia multipunctata* and *Limia tridens*. If you can help Seven with either of these then his email address is :-
sjgallo@hotmail.co.uk

J. Sara Fulton wants male *Phaloceros caudomaculatus* and female *Zoogoneticus purhepechus.* She has for sale pure black metalhead guppies. Sara can be contacted by email et :-
jsarafulton@virginmedia.com

Tim Caroen has for sale *Limia vittata* and *Xiphophorus pygmaeus*. Tim wants to get hold of a male *Gambusia vittata* and also some *Xiphophorus xiphidum*. If you can help Tim with any of this his email address is :-
tim.caroen@btinternet.com

Alan Goldsmith has a few *Xiphophorus nezahualcoyotl*. He is based in Bristol and his email address is :-
alan101uk2001@yahoo.co.uk

Steve Oliver has for sale *Xenotoca lyonsi* and *Ameca splendens* though they are both free to anyone who is setting up a breeding project. If you are interested in either of these species than Steve's email address is :-
steven.oliver63@yahoo.co.uk

John Benson has for sale :-
Limia sp tiger; Limia perugiae, Limia nigrofasciata [=Cuban or humpback limia];
Liberty mollies, Poecilia mexicana;
Chapalichthys encustus and Chapalichthys pardalis.

John also wants to get hold of Priapella intermedia and Priapella olmeca; Xiphophorus birchmani and Xiphophorus clemenciae; Carlhubbsia stuarti; Poecilia chica; Limia zonata; Characodon audax; Characodon lateralis; Ilyodon sp"Bumble bee" and "Alpha swords".
You can get in touch with John at :-

benson4045@live.co.uk

Andrew Barton has three pairs of Limia melanogaster for sale. His email address is :- andrewbarton67@gmail.com

Diary dates
Unfortunately, we had to abandon the idea of having a show / auction in April but we have two more meetings / shows / auctions planned for this year.

1. **Sunday 25th July** . The plan is to meet in Leicester but the final venue has not yet been decided. I will email out details nearer to the time. We are planning to hold an auction and for there to be a discussion group, talks by speakers and an Endlers display. The event will be ticket only but tickets will be offered first to paid-up BLA members. All proceeds are to go to Chester Zoo Aquarium and Tropiquarium to support their conservation work in these difficult times.

2. **Autumn Convention on the 18th and 19th September**. The autumn convention has long been the most important meeting of the year for us and this one is even more so!. We are planning a joint event with the British Killifish Association, the Fancy Guppy UK group and the British Cichlid Association. Again, I will email out details nearer to the time but the event will be ticket only with paid-up BLA members having priority. Again, we are planning displays, talks, discussion groups as well as auctions by all the different groups. This should be one of the best aquaristic events of recent years.