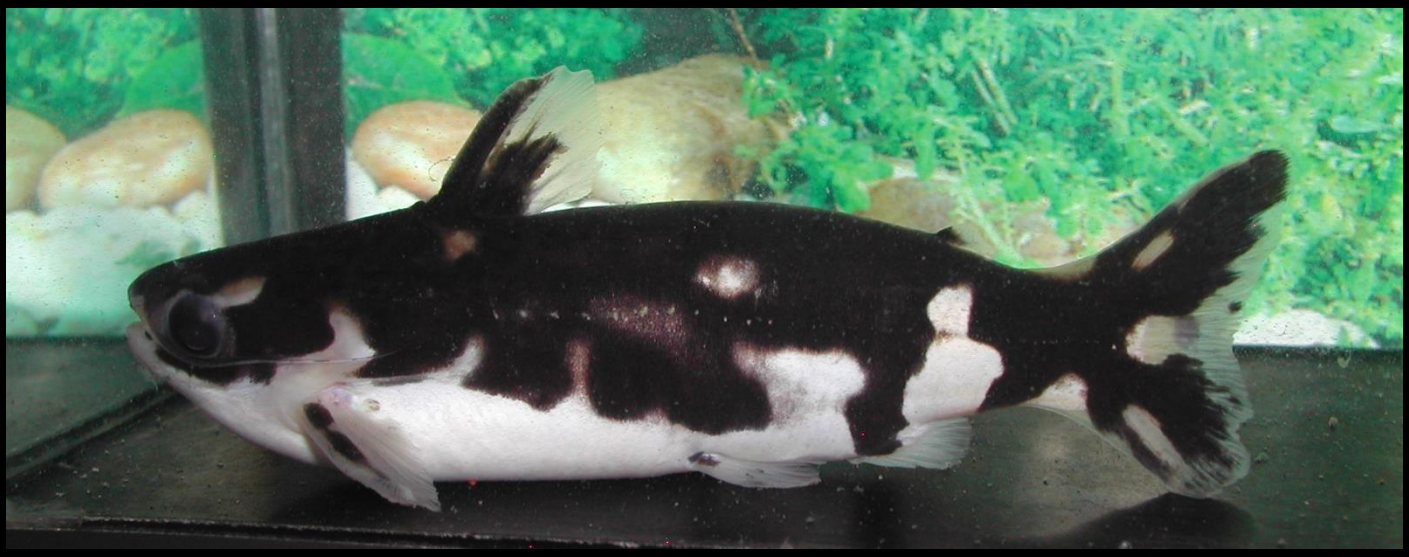
Journal of the Catfish Study Group



September 2020 Volume 21, Issue 3

In this edition: Breeding *Tatia orca* and *Balroglanis* sp. Peru; Breeding *Batasio fluviatilis*; Breeding *Peckoltia braueri*.

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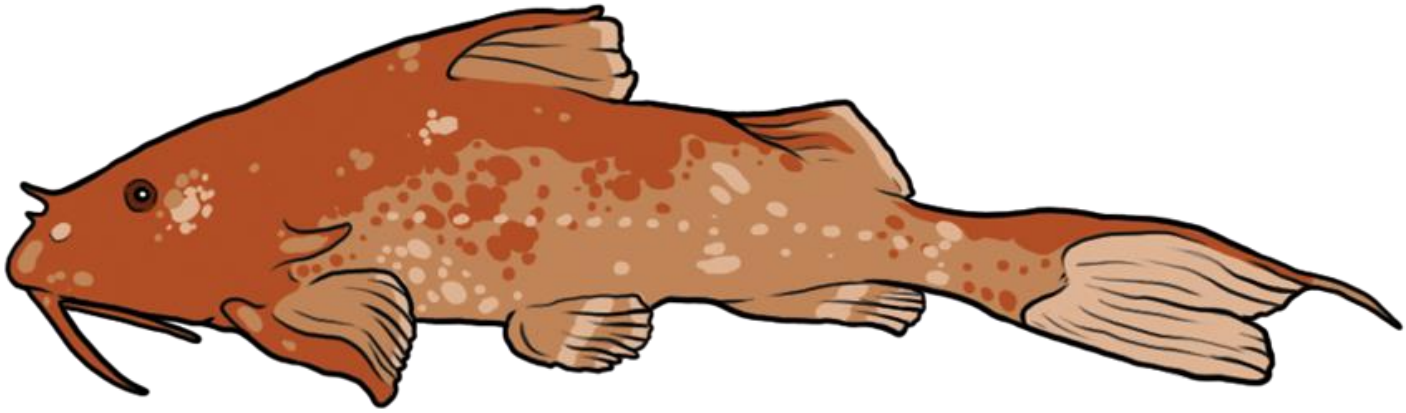
Cover image: *Tatia orca* Female. Photo: Steven Grant

Convention 2020 logo – *Hara mesembrina* original artwork by Coral Vane Wright, courtesy of Catfishes of the World



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Chairman's Report - Mark Walters

I am very pleased to see the CSG maintaining contact with its members through the latest issue of our Journal and through lots of positive engagement on our social media outlet. It's a crazy time for everybody, with a pause in all of our face-to-face social activities. I'm only aware of one aquatic event which has taken place since the CSG Convention in March and can't foresee when events will start again. It was a shame we couldn't host our annual open show and auction and of course will have to postpone the November auction under current conditions. The fate of the February 2021 event will be reviewed closer to the time. The most important thing is that we stay as safe as possible and follow the advice of those who know more about the bigger picture than we do.

For the immediate future, we won't be able to plan, deliver and host the usual March 2021 Convention which requires certain assurances for the CSG, its delegates, and the venue. If we committed to an event and we couldn't deliver, it would result in significant financial penalty for our club with potentially dire consequences. Not to mention the potential financial losses for delegates with their associated travel and other costs. Over and above these considerations is the safety of our members and for as long as restrictions exist, we won't be arranging face to face meetings. We will keep you informed if situations change and of any events we can support or plan and run.

Working from home has given many of us more time to spend studying and caring for their catfish. This year has been quite an active time for me, refurbishing my fish house, improving the filtration and subsequent water quality conditions and ultimately having quite a successful time breeding. Over the summer I have raised *Corydoras* C009, *Corydoras parallelus*, *Corydoras bondi*, *Corydoras boesemani*, *Sturisomatichthys* sp. Columbia, *Peckoltia lujani*, *P. braueri*, L76, *Pseudacanthicus* L065, *Hypancistrus zebra*, *Ancistrus temmincki*, *Ancistrus* sp. 'super-red' and *Ancistrus* sp. 'wabenmuster'. I've also had promising courtship behaviour from *Hypostomus faveolus* and *Panaqolus albomaculatus*, which I will spend some more time with to try and spawn. The main issue has been no outlets to let my offspring go, with the absence of the usual CSG auctions. Until such time, I will enjoy tanks full of shoaling *Corydoras* and resist adding to my collection to provide as much space as possible for raising my existing fish.

I hope you can all carry on enjoying this great hobby and keep in touch as much as possible through your phones, tablets and laptops on social media. Enjoy the latest Journal and thanks to all those who have contributed articles and of course our editor Steve Grant for doing a great job pulling all of the material together.

Mark

Editorial

If you have seen any interesting behaviour in your tanks, bred your catfishes, been collecting catfishes, or anything catfish related, please utilise the Journal to share with our members. I will be happy to help with the words if need be.

Steve Grant

Spawning two woodcats (Centromochlinae)
Regina Spotti

Adult male *Balroglanis* sp. Peru (Steve Grant)

Having a penchant for fish that others might consider unattractive is something that I am chided about quite often. I suffer the jokes and the remarks gladly; I don't want to follow in other people's footsteps, I have my own two feet. So, in 2012 when this "ugly" fish was offered by an importer, I had to have it, all joking aside.

What I obtained as *Centromochlus* cf. *macracanthus* from a shipment of fish from Peru do closely resemble photos of *C. macracanthus* Soares-Porto, 2000, which are from Brazil (this species has had a name change, and is now *Balroglanis macracanthus*). Distance being a major factor, as well as shorter dorsal and pectoral fin spines, it is unlikely that these are *B. macracanthus*. As per Steven Grant, this newcomer has been given the name *Balroglanis* sp. Peru. They appear to be from the Rio Madre de Dios basin.

Balroglanis sp. Peru female

Fast forward to September 2016 and my skinny fish grew and plumped up on regular feedings of a variety of live foods and meat-based pellet foods. From slender, less than 1.5 inch/3.8cm fish that were barely sexable, I wound up with 3 males and 4 females measuring between 3 and 3.5 inches/7.6-8.9cm.

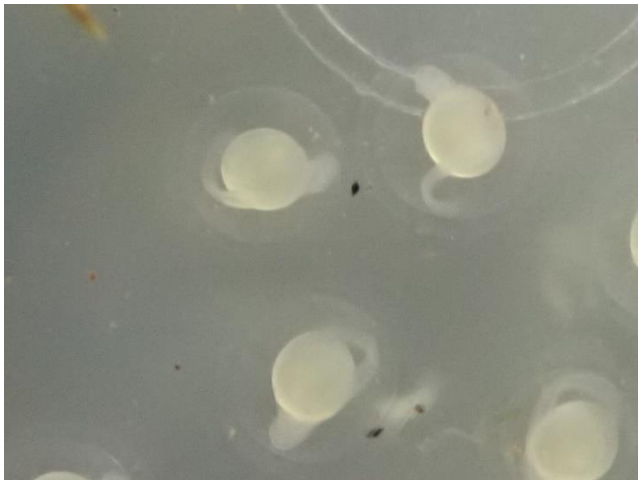
Males possess a modified anal fin that resembles the gonopodium on a livebearer; Females have a "normal" rounded anal fin. Practicing internal fertilization, the fish do not need to be in one another's company during egg laying. I moved them into a 29-gallon US/109 litre tank equipped with a sponge filter, sand substrate, live plants (Java fern, *Anubias* var. coffeefolia), plenty of wood with one floating and one sunken yarn mop. Generous feedings, plenty of water changes using filtered mains water yielded no breeding results, despite my efforts. Time to change things up a bit.

I began using straight R/O for their weekly water changes. Still, after nearly two months, nothing happened. I decided to let the tank "rot" for a few weeks. The pH began a slow, steady decline. At pH 3.7, I found eggs in the sunken yarn mop on the morning of November 24, 2016-Thanksgiving Day in the U.S. Thank goodness they spawned, because I was about to toss them into a different tank and forget about them.

Eggs in mop

Hundreds of clear 5mm, slightly adhesive orbs surrounding white "dots" were laced throughout the mop; they resemble frog eggs and are slippery yet pliable when first laid. It is difficult to pull them from the mops, but they do not break if you actually pinch them slightly to get a good grip on them. (BUT subsequent spawns have proven that on day two the eggs will break if not handled gently.) Using a net, I removed the loose mass of eggs and the mop and placed it all into a container with water from the parent's tank with an airstone on low.

On the second day, the embryo develops a tiny, thin tail and a bump of a head.



Day 2

And while I was fiddling with the mop and eggs, I noticed a golden fish in the tank. "What the Hell!" I wondered. Much to my surprise, this was a golden female specimen! The ugly duckling had morphed into a lovely golden girl!

Pair post spawn, with golden markings

This colour change occurs only during spawning. It fades gradually with any water changes.

Like the second hand on a clock, the tail tick-tocks back and forth. This constant motion of the tail does not stop until after the fry hatch after a period of four days.

Newly hatched fry at 4mm

The 4 mm free-swimming fry prefer to remain hidden in the mop, so I moved them into a one gallon/3.8 litre container and onto a dark shelf in my fishroom, upping the airstone to produce a moderate flow and waited for the small egg sac to be absorbed. After three days, I squeeze a 'dirty' sponge filter into a container of water that I'd removed from the parent's tank and add this to the fry container. This clouds the water for some time, but small off-white fry can be seen darting about the mop, chasing after the microscopic foods in the 'dirty' water. After the fifth day, I add powdered foods and begin to change water, again using water from the spawning tank. Subsequent feedings of microworm and live baby brine shrimp were included, three times per day. Fry grow painfully slow, but they develop a blotchy colour pattern, usually within the first week of hatching. At three months, the fry measure ½ of an inch / 12mm. It is nearly six months before the fry obtain a size of 1 inch / 25mm.

Fry at 2 months old / ¼ inch

I intend to keep this species for as long as I can. They might not be a dream and the fry can test patience, but I enjoy them. After taking a hiatus from breeding for nearly two years, they've

begun to spawn again, most recently in April and May of 2020. And they really don't require drastic pH values as the last two spawns have occurred at pH 5.5 and 6. The TDS measured 88ppm and the temperature was 78F/26C.

Balroglanis sp. Peru fry at 4 months old

Now, onto another species. I happen to fancy any species of 'wood cat', and I've obtained most of my fish from other people. People who know great fish. If my memory serves me, it was in October of 2014 at the All-Aquarium Catfish Convention (AKA CatCon) in the US, that Julian Dignall had brought over some juvenile specimens of *Tatia orca* (Sarmento-Soares, Lazzarotto, Rapp Py-Daniel & Leitão, 2017), also known as "Ninja Woodcat", and I purchased two pairs from him. The fish were in great shape and I was ecstatic to finally have this species.

Adult trio of *Tatia orca*

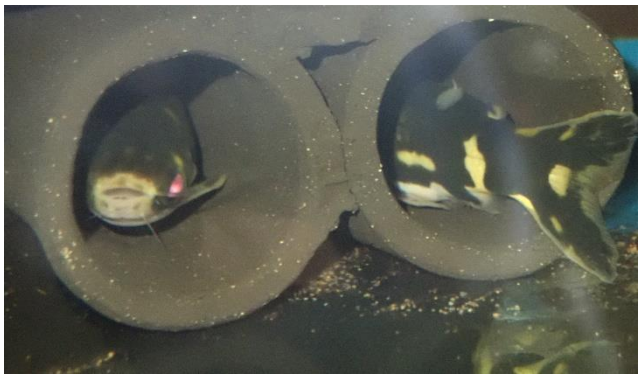
Once home, I housed them in a quarantine tank for a period of three months. They ate live black worm, chopped earthworm, meat-based pellets, and thawed frozen blood worm with gusto. During their quarantine I moved a nice shallow 30-gallon (113litre) long tank into my fishroom. The tank is/was decorated with a large piece of wood with some hollowed out areas in it, a few rocks, clay tubes, and a handful of Java moss. A Poret® Foam filter equipped with a powerhead set on high to create a strong current was installed after the tank was filled and left to run for two days before the fish were added. Once they were introduced to their new home, and their mad dash for cover was over, I just had to take care of them and wait. Ah, the wait!

I find woodcats to be generally peaceful, and my favourite part of keeping them is that they are so easy to feed. No fuss-budgets here in this group, live foods and chopped frozen foods and pellets always create a mad dash around the aquarium regardless of whether the lights are on or not! Keeping up the regimen of food twice per day during the week and ofttimes more tidbits thrown into the tank on weekends, the pairs grew nice and sleek. These fish are a truly stunning work of Nature.

Since obtaining this species, I've dreamt of their spawning. And after two years of feeding them like gods, keeping up with faithful water changes and other maintenances, I decided they should be old enough to breed. I began to convert them to R/O water with every other water change. The fish took this in stride and seemed to be quite happy. Hell, who wouldn't be? Paradise on a platter and what did I get? Fat happy fish, that's what!

Dry season tank

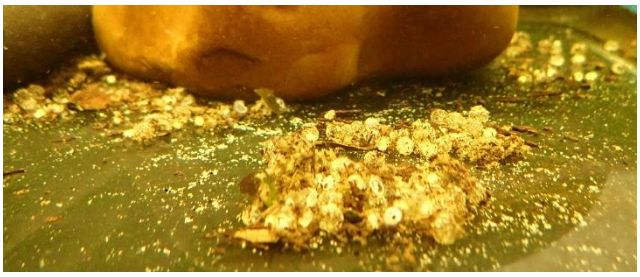
I watched the fish huddle together in their clay tubes, snuggle together in their wood, swim amok in the tank for their goodies. And then hide and wait for the next fistful of food to be dropped into their water. The only thing that happened was they grew some more and looked even more beautiful! The pH had gone from a steady 6.8 with a TDS of 220ppm to 5 with a TDS of 111ppm. Well, nothing happened. No frisky business, no eggs. Apparently, their size has nothing to do with sexual maturity and I am not Mother Nature to tell them when it's time to spawn. Looks like I'll wait some more. And wait I did.



The view one normally sees of *Tatia orca*

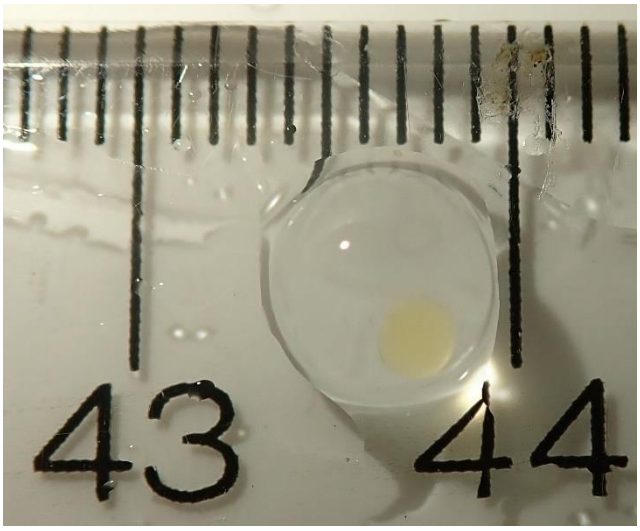
At the beginning of this past November, 2019, I stopped being the over-mothering, water toting, chef extraordinaire, dedicated fish keeper for these beauties. The waiting game finally got me; I succumbed to sloth. I actually ignored their tank whilst feeding those denizens of my fishroom whom would actually give me results. No more water changes, way less food, way less work for me. (Not really, but you know what I mean.) That is not to say that I didn't feed them anything ever again! Oh, no! That would be an almost act of treason in my book. I just fed them maybe twice per week, always just a few bits of meat-based pellets. As Poe put it, "only this and nothing more." And nobody died.

On March 6, 2020 I waltzed into my fishroom around 8am, full of caffeine and ready to start my day and I nearly fainted! I don't heat each tank but rather heat the whole room to avoid disaster and death, and I'd forgotten to turn the heater off the evening prior and the room was a sauna. After a quick glance around and finding everyone to be in good shape, I decided to leave the heater alone since it was a new day and a heat wave just might be occurring somewhere in South America or Asia. And maybe that would goad the uncooperatives (my word for the ones that don't spawn when I think that they should) into action! I began to feed everyone (except the uncooperatives) and check on my fry (of other fish, of course). I went about feeding, coaxing and/or chiding the inhabitants of each tank like everyone else does. I was just going to leave when I noticed the *Tatia orca* tank had quite a bit of whitish coloured debris on the bottom in one corner. Grabbing the siphon and a bucket, I stooped to remove the lid and was dumbfounded by what I saw. Or thought I saw. Eggs! Holy (bleep)! They spawned! Those are eggs!



Spawn 'debris' in the tank

Scattered loosely on the bottom of the tank were nearly one hundred eggs. Quite a few were broken, most were unfertilized, but there were nearly twenty eggs that looked viable. I quickly netted the lot out of the tank into a container filled with water from that tank and set about removing the worthless eggs. For a first-time spawn, this was to be expected as inexperienced fish seldom seem to get it right the first time. Each sphere measured 6mm and held the pale-yellow embryo in suspension. They were not sticky and did not adhere to one another. I find Auchenipterid eggs to be the loveliest of pearls, full of promise.

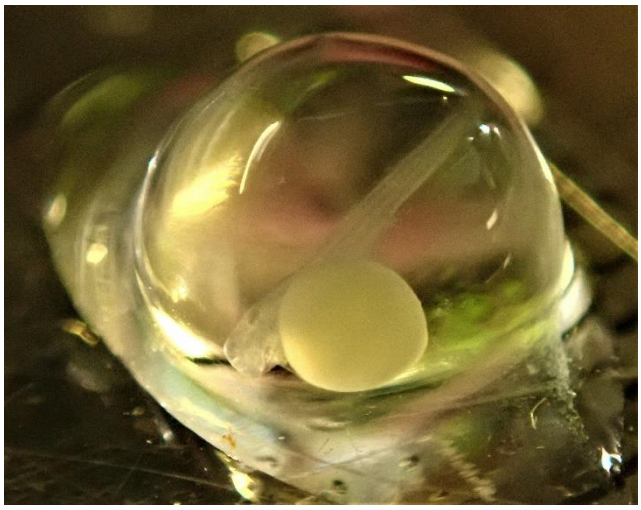


Tatia orca egg shortly after spawning

Just as with the *Balroglanis* sp. Peru, I noticed gold colour on the fishes in the tank. I checked the water parameters: pH 4.09, TDS 132ppm, and the temperature was 77F/25C. As most of this group seems to prefer, it was acidic, not too warm water. Since I was more concerned about the eggs, I didn't bother to tear the tank apart to remove adults for photo ops. All of the white areas on the fish were now a rich gold colour, more colourful and vibrant than any piece of man-made jewellery or idol ever created.

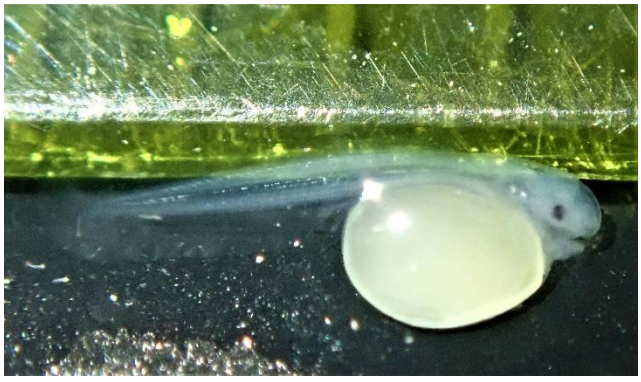
Tatia orca male after spawning

I used a 5.5 gallon/21 litre tank to house the eggs and used an airstone to create a gentle current. At day two, the tiny bump of a head and a long tail developed. Again, the tails twitch back and forth as if keeping with some internal rhythm. At this point, I added a handful of Java moss to the tank to ensure that the emerging fry would have shelter.



Developing egg, Day 2

After four days, the fry hatched and immediately hid in the Java moss. The pale-yellow egg sac was large and would take a further four to five days to be absorbed. The 4mm fry are opaque white with black eyes and the fins are all transparent.



Newly hatched *Tatia orca*

Since the fry are small and slender, for their first foods I simply squeezed the debris from a seasoned sponge filter into a container and add that slowly to their tank. I use a baster to remove the mulm, leaving out the excess water. I also added some ramshorn snails as janitors for uneaten foods. Also, light is resented and the tank was kept on a dark shelf with just one side of the tank receiving deflected light. A slight light source will draw infusoria to it and the fry will eat from there, but return to hide in an instant. They are really like dashing dots in the aquarium. Photographing them was an enormous challenge for me as they did not sit still, preferring to remain hidden in the shadows, even under one another, hiding under anything to avoid light.

After the fifth day post hatch, I changed a third of their water using water from the parent's tank. The fry did not seem to have a negative reaction, so I decided to do this each afternoon. Still dining on the mulm, I added a bit of a Sera Plankton tab that I had crushed to powder**;** just enough powder to barely coat the surface of the water. This regimen was carried out without problem. That is, until I came down with something not Covid-19 related and missed going into the fish room for a few days. When last I saw them, day 10, they were all on their way to adulthood.

Tatia orca fry, Day 10 / 7mm

My Fish Room – Part 2

Marc Wheeler

Inside the water room showing the setup of 6 stage RO, complete with booster pump and DI resin to get the TDS to 0ppm, beyond that is a 3 stage HMA unit which removes chlorine and heavy metals from my tap water. I usually add 300 litres of this HMA filtered tap water to the IBC then top off with 700 litres of rain water, or RO if it hasn't rained for a while. As you can imagine, it takes a while to produce this much RO so I fitted a small ball valve within the lid of the IBC and connected this to a pressure switch which cuts power to the booster pump once the IBC is full. This means I can leave it running overnight or while I'm out without flooding the garage.

From here we'll take a quick detour outside to show the rainwater collection system.

I use a 1000 litre potable water storage container, in black, this should avoid any issues with algae and chemicals leeching into the water.

I have diverted the guttering of about two thirds of our house directly into this, then used a smaller pipe to manage any overflow back into the drain.

This required me to construct a solid, level base to ensure it lasted long term.

As the rain falls down the drainpipe it's filtered through this mesh, which catches most debris, leaves, moss, etc.

Where it enters the top of the container, I have also used a layer of fine foam to catch finer debris.

1-inch hose, connects to a run of PVC with a coupler so I can disconnect for cleaning, or if any severe cold weather is expected.

This PVC goes through the garage wall and into the water room, where a pump is used to fill the IBC. When pumping this rain water in, I place a large diameter filter sock over the IBC opening to catch any last bits of debris.

That small pipe disappearing into the ground contains airlines from my fish room ring to power filtration in my small pond.

Back inside now to finish the lighting, before we add water.

I've never had much success with plants, so opted to start off with basic lighting, if I could see the fish it'd be good enough.

I bought several of these 5-meter reels of white dimmable, self-adhesive LED strips from Amazon.

There are two strips above each tank, one is dimmed to about 25% and comes on 15 minutes before the other at full power. I just use regular mechanical timer plugs to do this.

Also, from Amazon, I picked up several packs of this aluminium channel with snap-on clear plastic covers.

I cut these to length, stuck the LED strips inside, then soldered wire to link the strips together, each rack has one timer for the dim lights and one for the bright lights.

This is the finished product, clips supplied with the channelling were screwed to the plywood above to secure it above the tanks, the power adaptors then connect to the sockets shown.

These lights work well, and for the first year grew low light plants, mostly *Anubias* and Java Fern. It seems they then reached the end of their plant growing life, leaves are turned brown, and growth stopped. They are however, to my eye, still as bright, and fine for viewing the fish, I'm about to buy some proper aquarium lights for the tanks with plants to keep them growing.

Power Backup

The power for my air pump, plus the sump pump for the large tank both run through this Victron MultiPlus, it functions as an invertor, charger and automatic transfer switch. This is housed in my water room.

It passes through mains power to a socket in the fish room, while also charging the two 12v 50AH

deep cycle batteries connected in parallel. If a drop in the mains voltage is detected, within 15-20 milliseconds the power source is switched to the batteries, this is so fast you won't know it's happened. Once the mains voltage returns, it switches the pumps back to running on mains, then begins to charge the batteries again.

This system cost about £550, which is a lot to spend, but it's protecting a bigger investment in fish and gives great peace of mind, I have had to rely on this a few times, and also have a small backup generator. This system keeps the air and sump pump running for 8-10 hours on battery power, since installing this I have suffered one unusually long power cut which stretched to 12 hours, that is why I also have the small backup generator!

Disclaimer - Please make sure to seek the help of a trained electrician if you attempt any electrical work.

Maintenance

As mentioned at the beginning of the article, a key goal of the fishroom was to make maintenance easy. Before the fish room I had three tanks in different rooms of the house, two were upstairs. To perform 50% water changes on these took me about an hour and a half per week. Now on the seventeen main tanks in the fish room I can perform 50% water changes in an hour and a quarter per week.

The one thing I wasn't sure about was automatic water changes, this would make things so much easier, however, I convinced myself it would be better to make sure all the water being removed was old. In addition, it would force me to spend time looking at the tanks to check fish were healthy, and observe their behaviours. If I were to start again, I think I'd look more deeply into an automatic water change system.

I have 2-inch pipes run along the base of the racks with standpipes rising up after each tank, this flows through the wall into the water room, then outside to a drain. A trap (u-bend) was added in the water room, to ensure I didn't get any cold draughts in the fish room, and to stop any bugs from making their way in.

I created several PVC hooks with lengths of hose attached to make draining water easy, these have a bulkhead strainer to stop fish and plants being sucked up, this is modified by slipping a foam filter intake strainer over the end in tanks with very small fry.

The PVC is cut to the right length so that the syphon is broken when 50% of the water is removed. This allows me to start off several tanks draining at once, put the hose into the drain standpipes, and focus on something else. Water stops draining at 50% so I don't need to worry about completely emptying a tank.

When it is time to put fresh water into the tanks, I open the valve at the base of the IBC in the water room, and turn on the pump which feeds the water through the wall and around the pipework in the fish room. Each tank has its own valve complete with a length of hose this is

opened an appropriate amount and the hose placed into the tank. This part does need to be watched though; I have accidently overflowed one tank when distracted! At least I don't need to carry buckets or 25 litre RO barrels anymore.

Fish

As you are reading the Catfish Study Group Journal you must be ready to see some catfish! They are the main focus of this fishroom, every tank has at least one catfish in, I'll share some of the more interesting ones below.

F1 *Hemiancistrus* sp. (L128) – In the September 2019 (vol. 20, issue 3) edition of the CSG journal there was an article about my, limited success spawning the L128, unfortunately the adult group died shortly after the fish room was finished while I was out of the country. Luckily having the fish room allowed me to separate the young into a different tank.

The blue phantom was the fish which really sparked my interest in catfish, I spent a few years gradually building up a group with the eventual aim of spawning them. These young are now approaching 4 years old and look to be big enough to spawn themselves, I need to get them out to see if I have a mixed group, the largest is now ~5 inches TL.

Ageneiosus magoi – in the March 2020 (vol. 21, issue 1) edition of the CSG journal, our editor Steve Grant wrote a piece on these magnificent fish. I am lucky enough to have a group of 8 (4 female, 4 male), in quarantine at the moment. They are doing very well and hopefully by the time you read this they will be settled in the large 8 x 3 feet tank.

Initially I was a little worried as they didn't seem to be feeding, however that was due to my inexperience with predatory catfish. Most of my fish are grazers and will eat little and often, however, these *A. magoi* will still have full looking stomachs several days after consuming a prawn, or half a whitebait, which I didn't think they'd be able to swallow.

There have been encouraging reports of breeding behaviour from a fellow keeper, so hopefully soon, we'll know more about how these impressive fish reproduce.

Pseudancistrus sidereus – I seem to have a thing for spotted Loricariids, after spending a long time watching these in the shop, I bought a small group, as these don't seem to be commonly available. They are fairly bold fish, often coming out for food with the lights on, have an attractive pattern, and seem easy to care for.

Primarily a grazer, I initially added several large cobbles I had been growing algae on in a bin full of rainwater in my garden. The algae was gone within an hour of me putting the fish in the tank, it took me months to grow that algae in a bin outside. I now mainly feed them on the herbivore leaning Repashy gel foods, specifically Igapo Explorer, which they readily accept and appear to thrive on.

Only one of my fish, the largest male, spends a lot of time in a side entrance cave, beyond that there has been no sign of spawning behaviour. When I have the time, I plan to re arrange their tank, adding more rocks, and creating higher flow, to see if it changes their behaviour.

Akysis portellus – I have a large group of these fascinating fish in an Asian hillstream tank. They are so much fun to watch, especially when feeding, they greedily accept any food which will fit in their mouths, and appear to surf around the tank on the current while chasing food around.

Initially I was concerned with the flow rate in my tank being too much for these small fish, but they cope admirably with 10 times tank volume per hour turnover, finding a stone to hide behind or burying themselves in the sand. They look comical when swimming straight into the flow, but take it all in their stride.

These are a small fish only growing to ~40mm/1.5 inches TL, and very affordable (3 for £12 when purchased in early 2020), making it an easy decision to buy a group if you have a tank with a bit of flow.

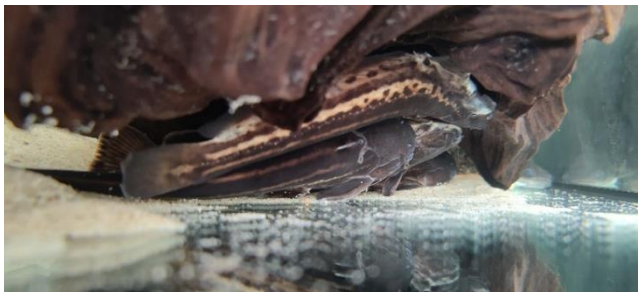
Spectracanthicus zuanoni **(L020)** – When browsing a local shop, I stumbled upon a group of these looking very skinny and not too happy. After a quick conversation with the staff, it seemed they had been in for a long time, so we struck a deal if I was to take the whole group, even a couple which looked so emaciated I wasn't sure they make the short trip home, but the price was too good to turn down, if I remember correctly 6 for £50. It took a few months but they all pulled through and have grown nicely.

Fairly recently after adding two new males to the female heavy group I got a spawn from them, which looked promising, the male seemed to be doing a good job, until about a week later he kicked out a bundle of egg shells with 3-4 which still looked viable. Unfortunately, after a couple of days in a tumbler they fungused, and I haven't had another spawn since.

Although a dull grey spotted colouration, which may lead them to be overlooked by many, these are generally much more affordable than other fish from the Xingu, and I like fish with spots.

Trachelyopterichthys taeniatus – These are a new fish for me, I have been after some for a while and I'm grateful to Pier Aquatics for importing 10 for me. At the time of writing I have had these fish for 2 weeks, and I'm really enjoying them. They spend most of their time hiding, but you can always see a stripy tail or head sticking out from under a piece of wood. I have had an increasing interest in woodcats for a while, but something which initially drew me to these was their anguilliform (eel-like) appearance, very different to most other woodcats. They are feeding well on anything offered from bloodworm, to pellets.

I have also noticed possible spawning behaviour, this has been reported by a few other keepers, but I haven't yet seen evidence of a successful spawning, I'll keep my fingers crossed.



Hassar orestis – One of my favourite fish to watch in the fish room, always active, although skittish at times, my daughter refers to them as scaredy cats as they always swim away when approached. This makes it very tricky to get a good picture of them. Another fish which appears to be unfussy with food, they mainly get various pellets and bloodworms, and always have a round belly. In my experience they need a lot of space, when startled they can swim the length of their 8 feet long tank in less than 2 seconds.

I have noticed one of my fish, presumably a male, has a long dorsal fin extension, at first, I was excited thinking they may spawn, but he has kept it for several months with no other changes in behaviour.

Scenes from a collecting expedition

Uruguay River, Argentina September 2019. Collecting expedition report

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Biodiversity surveys are a cornerstone for designing managements and conservation policies and without them no effective measures can be taken. Additionally, it is important to have a correct characterization of it as not only they are part of the Natural Patrimony of humanity but we need them to live in better environments. Fishes in particular, are extremely important for their ecosystemic roles, representing a great portion of the aquatic ecosystems' biomass and ecological functions. Also, fish represent important economic resources and one of the main food sources for the human populations inhabiting in these areas. The aquarium trade and hobby can also be an allied of the conservation of these species by funding their conservation and study and by rising awareness in the general public about their importance and popularizing the knowledge of this group. In this sense we believe that science needs to be connected with society and their needs and a part of that is the important interaction with aquarium societies as the Catfish Study Group that not only promotes the knowledge of siluriform species but also funds researches on this group aiding to these goals. In that context we received a founding of the CSG to investigate a relatively poorly known basin where many species are yet unknown or poorly understood.

These campaigns are important due: 1. the relevance of studying the biodiversity, especially in poorly sampled areas; 2. working on the checklist of freshwater fishes (for example) of Argentina (and all countries) are part of the requirements of the Convention on Biological Diversity (CBD) (see, Reis et al. 2003) and 3. Provide an updated list as Serra *et al* (2014, 2019) from the Negro River in Uruguay.

Northern Argentina is characterised by a diversity of ecoregions, crossed by important hydric systems, such as the Paraná, Uruguay, and Iguazú River basins, with highly diverse ichthyofaunas. In recent years many species of Catfishes had been described, some of them by members of our research group, such as: *Corydoras gladysae* Calviño & Alonso 2010; *Corydoras petracinii* Calviño & Alonso 2010; *Heptapterus qenqo* Aguilera, Mirande & Azpelicueta 2011; *Heptapterus mbya* Azpelicueta, Aguilera & Mirande 2011; *Microglanis nigrolineatus* Terán, Jarduli, Alonso, Mirande & Shibatta 2016; *Cambeva ytororo* (Terán, Ferrer, Benitez, Alonso, Aguilera & Mirande 2017), *Farlowella azpelicuetae* Terán, Ballen, Alonso, Aguilera & Mirande 2019 (Calviño & Alonso, 2010; Aguilera *et al.,* 2011; Azpelicueta *et al.,* 2011; Terán *et al.,* 2016a; Terán *et al.,* 2017;Terán *et al.,* 2019). Additionally, we were able to expand the known distributional range of some species from the Bermejo River such as: *Ceptosis starnesi* Vari, Ferraris & de Pinna 2005; *Corydoras micracanthus* Regan 1912*; Hypostomus cochliodon* Kner 1854*; H. boulengeri* (Eigenmann & Kennedy 1903)*; Bunocephalus doriae* Boulenger 1902. Also, new records from the Paraná River basin in Argentina: *Loricariichthys edentatus* Reis & Pereira 2000; *Cetopsorhamdia iheringi* Schubart & Gomes 1959 and *Pimelodella mucosa* Eigenmann & Ward 1907 (Terán *et al.* 2016b; Alonso *et al.,*

2016; Alonso *et al.,* 2018; Aguilera *et al.,* 2016; Terán *et al.*, 2019; Benitez *et al.,* 2017; Aguilera & Azpelicueta, 2015).

Nevertheless, our greatest sampling effort was devoted to explore the highly diverse ichthyofaunas of the Bermejo and Paraná Rivers, but recently we started to explore other poorly studied basins within Argentina with good results, such as the Uruguay River basin in the province of Misiones, from which we described *Heptapterus mandimbusu* Aguilera, Benitez, Terán, Alonso & Mirande 2017 (Aguilera *et al.,* 2017).

The Uruguay River is one of the main tributaries of La Plata basin. In Northeastern Argentina in the province of Misiones three sierras of about 800 m asl delimitate (and isolate) three distinct drainages: Paraná, Uruguay, and Iguazú. The Uruguay River flows from north to south and forms part of the natural boundaries between Brazil, Argentina, and Uruguay, separating from the two countries the Argentine provinces of Misiones, Corrientes and Entre Rios.

The river has about 1,838 km in length and starts in the joint of Canoas and Pelotas Rivers at the Serra do Mar in Brazil. In its southern portion, the Uruguay River joint the Paraná River forming the Río de la Plata estuary.

Collecting route

On the beginning of September 2019, we carried out an expedition, traveling about 800 km in one day from San Miguel de Tucumán city (NW Argentina), facing to the starting point of the sampling in Corrientes city in the homonym Province. On the next day, the fish sampling began, with the idea of going around the entire province of Corrientes, so we took RN12 (12th National route), bordering the Paraná right side (south), then the RN120, finally reaching the RN14 to Santo Tomé were we finally reached the Uruguay River. From this point we went first North to the limit of Corrientes-Misiones, then from Santo Tome we went south (along the RN14 that runs parallel to the Uruguay river). Then we travel along the RN123 to the Miriñay River-the last point- that crosses almost the entire province of Corrientes. Finally, we took RN123 from east to west, we took the RP27 (provincial route number 27) that runs parallel to Paraná River and went North in direction to the starting point Corrientes City. The total route was approximately 1065 km (taking into account only the linear distance traveled on route).

Fig. 1. Left: in red Province of Corrientes. Right: The whole tour from Tucumán to Corrientes and return.

Collecting points at Uruguay River basin

Aguapey River at -27.822900, -56.257148

Ciriaco stream -28.232765, -55.812791

Guaviravi River at -29.371004, -56.853084

Ibicuí River at -29.099744, -56.603511

Miriniay River: -29.560384, -57.511815

Morredor River: -28.186330, -55.758085

Uruguay River (Santo Tomé) at -28.550363, -56.027170

Uruguay River (Yapeyú) -29.466771, -56.808057

Yurupé River at -29.557859, -57.571202

Fig. 2. Up, from left: Aguapey, Guaviraví, and Ibicuí Rivers. Down: from left: Yurupé and Miriñay Rivers, and Ciriaco stream.

Collecting Methods

We collected intensively in all the points using many methods including: traditional arts as hand nets; frame nets (used against submerged

vegetation); trawls on sand or mud banks; bait fishing; cast net and electrofishing; in some occasions making combination of methods.

Fishes were euthanized by immersion in an anaesthetic solution (0.1% 2-phenoxyethanol), and then fixed in a 4% formaldehyde for one week, washed in water for one day and transferred to a 70% ethanol solution for preservation, and now they are housed in the ichthyological collection of Fundación Miguel Lillo.

Fig. 3. Up: from left: Trawl net in a mud beach at Yapeyú, frame nets against submerged vegetation. Down: from left: electrofishing plus hand nets, nocturnal fishing rod with bait and cast net.

Results

List of the collected catfishes

SILURIFORMES

Loricariidae

Ancistrus cirrhosus (Valenciennes 1836)

Hisonotus maculipinnis (Regan 1912)

Hypostomus aspilogaster (Cope 1894)

Hypostomus commersoni Valenciennes, 1836

Hypostomus roseopunctatus Reis, Weber & Malabarba, 1990*

*First record for Argentina (Terán *et al.,* 2020)

Loricariichthys edentatus Reis & Pereira 2000

Loricariichthys platymetopon Isbrücker & Nijssen, 1979

Rineloricaria parva (Boulenger 1895)

Rineloricaria sp.

Fig 4. Left column, from top: *Ancistrus cirrhosus*, *Hisonotus maculipinnis, Hypostomus aspilogaster, Hypostomus commersoni.* Right column, from top: *Hypostomus roseopunctatus, Loricariichthys edentatus, L. platymetopon, Rineloricaria parva, Rineloricaria* sp. live specimens except *Hypostomus roseopunctatus, Loricariichthys edentatus,* and *L. platymetopon*.

Callichthyidae

Callichthys callichthys (Linnaeus 1758)

Corydoras aeneus (Gill 1858)

Corydoras longipinnis Knaack 2007

Corydoras undulatus Regan 1912

Aspredinidae

Bunocephalus doriae (Boulenger, 1902)

Auchenipteridae

Trachelyopterus lucenai Bertoletti, Pezzi da Silva & Pereira, 1995

Pimelodidae

Iheringichthys labrosus (Lütken, 1874)

Pimelodus maculatus Lacepède, 1803

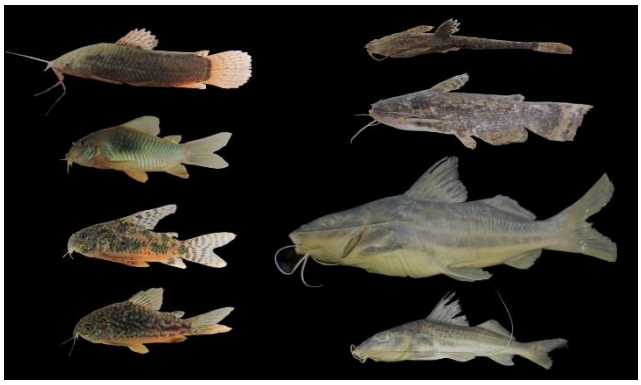

Fig. 5. Left column, from top: *Callichthys callichthys, Corydoras aeneus, Corydoras longipinnis, Corydoras undulatus*. Right column, from top: *Bunocephalus doriae, Trachelyopterus lucenai, Iheringichthys labrosus, Pimelodus maculatus*. Live specimens except the last two.

Heptapteridae

Heptapterus mustelinus (Valenciennes, 1835)

*Imparfinis mishk*y Almirón, Casciotta, Bechara, Ruíz Díaz, Bruno, D'Ambrosio, Solimano & Soneira, 2007

Pimelodella gracilis (Valenciennes, 1835)

Pimelodella laticeps Eigenmann 1917

Rhamdia quelen (Quoy & Gaimard, 1824)

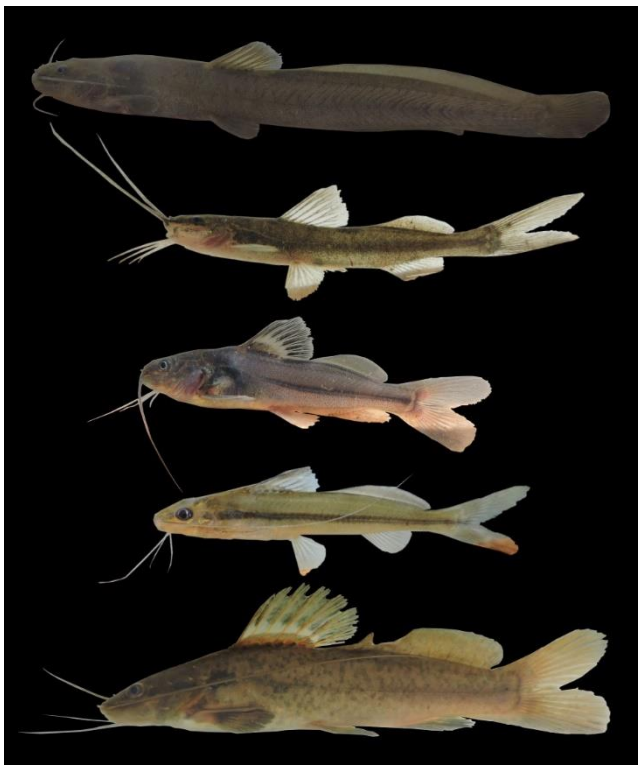

Fig. 6. From top: *Heptapterus mustelinus, Imparfinis mishky*, *Pimelodella gracilis, P. laticeps, Rhamdia quelen*. Live specimens.

Discussion

The aim of this survey was to explore poorly studied environments in the Uruguay River basin in order to fulfil a gap on biodiversity information at this area. For that, we sampled a great variety of environments including rivers, streams, and wetlands. In this note we provide a report of the more important findings of the campaign, which highlight the need to continue the samplings in this area in order to complete the inventory list of fishes in the Uruguay River basin. Nevertheless, we still have much work to do: the identification of some lots from this collection and the obtention and analyses of DNA sequences from tissue samples collected. This work has been slowed down by the COVID-19 pandemic and the impossibility of working at the ichthyological collection during this situation.

Finally, we envision important contributions in the future as more surveys are performed in this high biodiversity region. The hope is that those works aid to a better knowledge of the fish fauna of the area, together with serving as a basis to make effective management and conservation policies. In addition, to also produce popular science material to increase the knowledge of these fish in the society in order to increase the general value of this important part of the Neotropical Biodiversity. Research, Education, and Conservation are our goals.

Fig. 7. After collecting in Miriñay River. September 2019. From left: JMM, GET, GA.

Acknowledgements

Catfish Study Group partially supported this campaign; we thank for the support, especially to Mark Walters.

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Breeding *Batasio fluviatilis*

Stuart Brown

Back in 2017 I had the pleasure to attend the Cory-vention in Wigan. During the convention I quickly popped into Pier Aquatics (Wigan) to see what was new in store. As anyone who's had the chance to visit Pier Aquatics can tell you there is something for everyone. Well I spent ages musing over what I should buy. Amongst my

purchases were a group of 6 *Batasio*, labelled by the exporter as *Batasio havmolleri*. I wasn't familiar with the genus let alone the species. After speaking to Steven Grant, he told me they were *Batasio fluviatilis* (Day, 1888) from Thailand.

Batasio fluviatilis at Pier Aquatics, shortly after import. Image by Steve Grant

They were placed into a 500-litre set up along with Barbs, Rasboras, Loaches and a huge *Scobiancistrus* amongst many other fish. The tank is decorated with lots of bogwood, fine sand, pebbles and lots of tubes. And planted primarily with some *Anubias* and Java Fern. Feeding wasn't an issue as they readily take anything offered. They were fed quality flake food, Earthworm pellets, live tubifex amongst a varied diet. They get a weekly water change of 20% cooler water. The tank ran at a slightly warmer temperature of 81F (27C) due to the sharing with the *Scobiancistrus*. The water values were Ph 6.5, Kh 2.

Male *Batasio fluviatilis* (see genital papilla)

This set up seemed to suit them well as they grew quickly and I could see them sexing out. Females were larger and a lot chunkier around the abdomen, and males have a genital papilla.

I could see sparring and sizing up between both sexes, consisting of swimming around the tank parallel to each other fluttering their fins. There was never any damage done during this time and in hindsight I believe the swimming beside each other was actually courtship behaviour. but I never saw anything that made me think I was watching them spawn.

During March 2018 I spent a week in hospital. On my return home I had plenty of recuperation time sat watching all my tanks. One of these days I was sat watching the 5-foot tank after adding some Tubifex I noticed something moved in and around the *Anubias* roots. What could it be I thought to myself? After several minutes patiently watching several different sized *Batasio* fry emerged to steal a bite of Tubifex and dart back into the foliage. I counted at least 8, to which I thought was amazing that any had survived considering the tank mates. The Interesting thing was there were several different sizes, leading me to believe they must have been from different spawnings.

After some sump maintenance I discovered more youngsters in a pre-filter sock, taking the numbers up to 11.

Batasio fluviatilis small juvenile

Over the coming weeks these youngsters grew rapidly and were already an inch (25mm) long and perfect miniatures of the adults.

Batasio fluviatilis juveniles showing adult pattern

Within 6 months they had grown to over 2 inches (60mm) and were swimming and feeding with the adults and sparring amongst themselves. As they grew, I noticed a few split fins and decided to thin the group out.

I still keep some of these fascinating and sometimes secretive fish. And if I ever get the chance to try another species of *Batasio* I'd love to try breeding them.

Rediscovery of the holotype of *Pseudopimelodus bufonius* (Valenciennes, 1840)

Steve Grant

MNHN-IC-A-8973 rediscovered holotype of *Pseudopimelodus bufonius*. Image by MNHN collection-Paris

Vespaglanis Grant, 1999 was described by the author as a subgenus of *Pseudopimelodus* Bleeker, 1858, with the type species designated as *Pimelodus charus* Valenciennes, 1840. This was because the author was wrongly under the impression that Bleeker (1862) had designated the type species of *Pseudopimelodus* as *Pimelodus raninus* Velenciennes, 1840, which is also the type species of *Batrochoglanis* Gill, 1858. Shibatta later (2003) correctly pointed out that it was Gill (1861) who designated a type species of *Pseudopimelodus*: *P. bufonius* Valenciennes, 1840. The result of this is that if the type species of *Vespaglanis* (*P. charus*) is congeneric or conspecific with the type species of *Pseudopimelodus* (*P. bufonius*) then *Vespaglanis* is a junior synonym of *Pseudopimelodus*.

Grant (1999) chose *P. charus* as the type species of *Vespaglanis* as the author was not convinced that the holotype of *P. bufonius* was the same species commonly identified as it by all authors since Mees (1974:193), due to the apparent lack of distinct body bands on the holotype, but was unable to unequivocally prove this as the holotype was lost (Boeseman, 1972).

The description of Valenciennes (1840) compared the holotype to his *Pimelodus punctulatus* = *Pylodictis olivaris* (Rafinesque 1818), a fish remarkably similar to *Cephalosilurus nigricaudus* (Mees, 1974), which is present in the country from which the holotype of *P. bufonius* came from. Valenciennes stated (roughly translated) that the "The caudal is indented in crescent; its upper lobe is narrower and shorter" which appears to have been used in conjunction with the longer lower jaw to identify it with the fish currently accepted as *P. bufonius sensu* Mees (1974:13). However, the description of the colour pattern was given as (roughly translated) "All this fish is dark brown, a little lighter under the belly, marbled, spotted and dotted black. The fins are the same, but their edge is paler, and has a darker stripe inside than the rest. All in all, its broad head and colors give it a brown toad appearance". The specific name *bufonius* relates to the generic name for some toads: *Bufo*. This colour pattern is reminiscent of *Cephalosilurus nigricaudus* and *Batrochoglanis villosus* but those species do not have a 'crescentic' caudal fin. According to Boeseman (1972) the holotype is lost and does not appear to have been seen by anyone since 1840, and the type locality of Cayenne (French Guiana) is probably incorrect and likely to be Suriname, environs of Paramaribo.

Raphael Covain has kindly provided images of "*P. bufonius*" from Marowijn and Corantijn rivers, Suriname. The small specimen from the Marowijn has a very clear pale and dark banded appearance, whereas the larger Corantijn specimen has a more mottled appearance, but still clearly has vertical body bands, which were not mentioned by Valenciennes in his approx. 19cm holotype.

Jan van Uden has kindly provided images of "*P. bufonius*" from the Sipaliwini river. One specimen is approx. 5cm SL and has clear vertical light body bands, and a larger specimen of approx. 15cm TL has darker bands with some spots.

It is interesting that Valenciennes did not compare the pattern or form of *P. bufonius* with a species he contemporaneously described: *P. charus*, which from the drawing of the holotype of the latter (reproduced in Mees, 1974), accords with the general appearance of what is attributed to *P. bufonius* (particularly the distinct dark body bands).

There are some specimens of *Pseudopimelodus* that have a mottled body with no distinct body bands, but these are rare. Daniel Konn-Vetterlein's image shows such a specimen, which was from the Rio Xingu. The three other specimens that were caught on the same trip, all have distinct body bands (although on one they were somewhat fragmented).

Pseudopimelodus sp. Rio Xingu.

Daniel Konn-Vetterlein

The loss of the holotype of *P. bufonius* has made it difficult to be completely certain of its identity. As well as the issue of *Vespaglanis*, this possibly affects decisions on the validity of several other genera (described and undescribed) in Pseudopimelodidae, and also makes it difficult to be certain about resolving the cryptic species diversity of species currently considered to be *P. bufonius* (see Rangel-Medrano *et al.*, 2020; Restrepo-Gómez *et al.*, 2020).

To try and resolve this the author attempted to find the holotype in the two most likely institutions (if still extant): RMNH and MNHN. A search in RMNH database found no possible specimens. A search in MNHN database found several ones, but one specimen was of particular interest. It has no collection data, but its accession number is close numerically to that of the holotype of another Valenciennes species described in the same publication: MNHN A-8971, the holotype of *Auchenoglanis occidentalis* (Valenciennes, 1840). Thanks to James Maclaine of BMNH and Jonathan Pfliger of MNHN collection-Paris, the author was able to obtain photographs and measurements of the specimen. The specimen is 16.2cm SL and 19.6cm TL, which ties in with the measurement given by Valenciennes. Strikingly, for a *Pseudopimelodus*, the specimen has no distinct body bands (even after accounting for its age), and is instead mainly mottled with brown, which is one of the key characteristics described by Valenciennes, and which led to Grant choosing *P. charus* as the type species for *Vespaglanis*. Other information given by Valenciennes also seems to match the specimen. On this basis the author considers that MNHN-IC-A-8973 is the holotype of *P. bufonius* (Valenciennes, 1840).

MNHN-IC-A-8973. Image by MNHN collection-Paris

The morphology of the holotype matches with that of the diagnosis of *Pseudopimelodus* by recent authors.

Validity of *Vespaglanis*

The type locality of *P. charus* (type species of *Vespaglanis*) is the Rio Sabara, which is a

tributary of the Rio Das Velhas. The confluence of those rivers is at the municipality of Sabará, Minas Gerais, Brazil. Thanks to James Maclaine and Peter Peterson the author has been able to obtain images of five specimens from the Rio Das Velhas basin:

BMNH 1925.1.12.4, Jaguara, Rio Das Velhas, "about 32 miles north of Belo Horizonte", approx. 20.0cm SL

BMNH 1861.5.16.3 (dry), Cipo River, approx. 250mm SL

UZMK 330, Rio Das Velhas, 20.2cm SL

UZMK 331 (skeleton), Rio Das Velhas

UZMK 333, Rio Das Velhas, 11.9cm SL

UZMK 334, Rio Das Velhas, 13.1cm SL

UZMK 334, *P. charus*. Image by Peter Peterson.

The specimens have short posterior cleithral processes and 7 pectoral fin rays which would key them as *Pseudopimelodus* rather than *Rhyacoglanis*. They also match the generic boundaries of the now rediscovered holotype of *P. bufonius*.

On the basis of these specimens and the morphology of the holotype of *P. bufonius*, *Vespaglanis* is a junior subjective synonym of *Pseudopimelodus*. Interestingly, both the Rio Xingu species and the UZMK *P. charus* specimens above, have the anterior margin of the dorsal fin spine, with serrations. Something that Restrepo-Gómez *et al*., 2020 found to be a useful character to help differentiate species in this genus.

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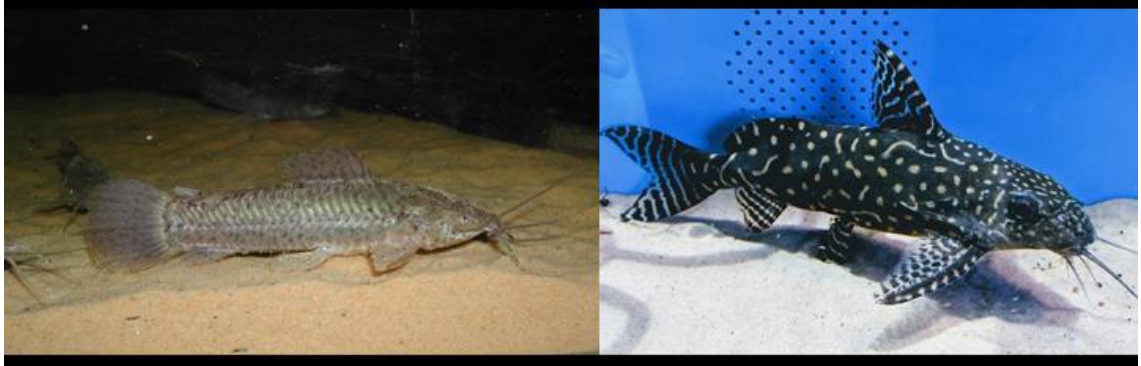

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Breeding the Wormline pleco – *Peckoltia braueri* (Eigenmann, 1912)

Mark Walters

Peckoltia braueri L121. Image by Steven Grant

My first encounter with the wormline pleco was a single fish that was being sold in a local fish store originating from a well-known Yorkshire fishkeeper who was giving up the hobby. From fish show records, I discovered the single female had been exhibited at least in 2001. I still have the individual, plus a companion of the same type making it at least 25 years old (considering it was adult when exhibited), its true age is anybody's guess! In no small part due to its longevity and my duty of care for such a lovely fish, it became a fish house favourite, but I knew I wouldn't have chance of breeding it considering the only other specimen I owned was another female.

L135

L135. Steven Grant

Something of a distraction, but my interest in the 'group' of wormline plecos was stimulated and I identified mine as the L135 'type'. I realised there were at least 2 other L numbered types, often lumped together as the described species *Peckoltia braueri*. Steven Grant presented the species group in his article in the CSG Journal in April 2011 with a great synopsis of the confusion within the group. I haven't

come across other L135 to add to my group, but in the following years did pick up a pair of the closely related 'L121' type.

L121 male

L121 female

The obvious difference between the 3 types is the patterning in the dorsal and caudal fins. In the L305, the fins do not present obvious banding with a gold seam fringing both major fins. In L121, dark bands are present within the major fins, with the gold seam fringing uninterrupted. In L135, dark bands are present which merge into the fringing gold seam.

L305

L305 Caudal fin. Steven Grant

L305 Dorsal fin. Steven Grant

I believe I also have the third L numbered type L305, which at least is considered to be the true *Peckoltia braueri*. L121 is also considered to be the same species and shares the same river system as L305. To be honest, I need to squint to see any visible differences between my L121 and suspected L305, both of which seem to have very similar body pattern, depending on their mood!

My personal view is that L121 and L305 are one and the same species, which would make them both the real-deal *Peckoltia braueri*. The Planet Catfish cat-e log seems to agree with this view – (quote) '*L305 is certainly this species. L121 is probably this species. L135 may be this species although it originates from a neighbouring river*'. L135 appears quite distinct from *Peckoltia braueri*, based largely on colouration and pattern (in addition to geographical distribution). L135 is a slightly larger species

(140mm v 120mm SL), based on my observations at least.

L121 head profile, showing the wormlines

My pair of L121 have spent the last 10 years in numerous different tanks in my fish house, sometimes sharing their accommodation with other plecos sometimes on their own, but always with a multitude of caves and bogwood to get lost in. They have quietly settled in their environments eating a wide range of omnivorous foods but have shown very little indication of courtship. Most recently, I noticed a bit more activity between the pair including the female showing interest in entering a cave. They were in a tank with some *Hypostomus* who appeared to also want to use the caves so I decided to have a change around.

L121 pair (female right)

In the early summer of 2020, they were given their own 120litre tank, part of a larger 2000litre centralised system and I kept a closer eye on their behaviour. I also started dripping HMA (heavy metal reduction) filtered water into the tank to drop the temperature slightly and improve the quality and chemistry of the tank in an attempt to trigger spawning activity. After a few weeks in their new tank I noticed increased activity with the female appearing more rotund. Both fish were actively investigating available caves and before much longer the male had enticed the female into their chosen spawning site.

I hit the record button on my mobile phone and posted a few minutes of video to the CSG Facebook site to share my excitement! After a few days of this behaviour, I noticed the female had left the cave and appeared visibly slimmer. The male was now fanning a good clump of eggs.

L121 male guarding his cave

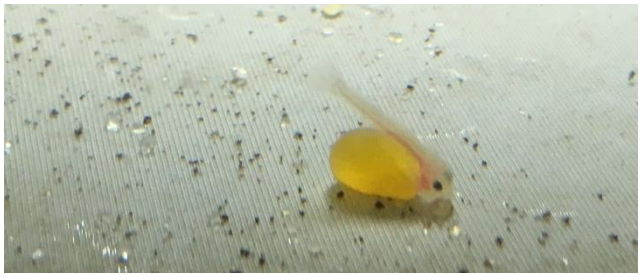
From my previous experiences of breeding *Peckoltia* species (including L211, L080, L076/99, *P. compta*, *P. lujani*), I was quite optimistic that the male would do a good job of caring for the eggs up to the point of hatching. In the past, I don't routinely remove eggs from spawnings of this genus, unlike other Loricariidae groups who may devour their eggs if disturbed.

L121 male and fry

I kept a close eye on the brooding male and found him with a bunch of wrigglers after less than a week, followed by a small number being kicked out of the cave. I siphoned these escapees into a fry raising tank which enabled a few early pictures to be taken. For the remainder, I left them for another week before 'harvesting' the brood into the same raising tank. In total, over 60 fry emerged from the cave.

I added some leaf litter from another tank, plus a few bits of bogwood to provide grazing substrates and after another week started adding spirulina-based paste foods. Additional food sources were added after another week with crumbled soft granules and newly hatched *Artemia* providing their staple diet up to the time of writing. The fry are now at around 6 weeks old and have started to develop the distinctive wormline pattern on their snouts, appearing to resemble their parents. A few fry remained in the cave with the male and I left them to grow-on in the main tank. In the meantime, the female is fattening up again and starting to show interest in round 2.

In sharing my experiences on social media, I have heard from other experienced aquarists with their experiences breeding L135, although I am not sure if there have been successes with L121.



L121, 1 day old

L121, 5 days old

L121, 7 days old

L121, 4 weeks old

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