

# Journal of the Catfish Study Group



December 2016

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Contents

AGM 2017 and constitutional amendments	5
Chairman's Report	8
<i>Panaqolus claustellifer</i> Tan 2016 – the Rossoneri pleco	9
Catfish collecting in the río Xingu (part two)	12
A confirmed case of hybridization between <i>Corydoras panda</i> and <i>C. weitzmani</i> , with fertility of the hybrid offspring (Siluriformes: Callichthyidae)	24
Convention 2017 speakers	29
Report on the 2016 CSG Open Show	31
Update on the trade of threatened catfishes	34

Cover image: *Corydoras panda*X*weitzmani*. Photo: M. Hardman

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## AGM 2017 and constitutional amendments

In my second year, and in my second stint as a CSG committee member it's my "job" as secretary to attend to matters surrounding the constitution. More

correctly, it's part of my committee role, but it sometimes feels like it's my sole job or at least the focus. And rightly so, I hear you cry? We live in interesting times and democratic processes regularly make headline news – vital then that one of the world's longest-standing aquarist societies has a 13 page, 6000-word document to ensure it runs well and to protect its resources, reputation and members when issues arise.

While most online groups function without a constitution, they are yet to stand the test of time and don't provide a quarterly journal, regular events and an annual international



convention. While some are making good progress, the majority cheer social media shareholders by improving advertising revenues with "here today, gone tomorrow" information streams. As a non-profit organisation, the CSG is obliged to provide and maintain a transparent account of its governance for the committee, its members and UK authorities. However, we remain mindful that members have joined the group to hear about catfishes rather than CSG bureaucracy, and we strive to minimise these intrusions.

The key is balance. We must remain fully accessible to those with an interest in catfishes and we do need a constitution as a frame of reference. My job, indeed that of the committee is to maintain and improve its relevance, brevity and clarity. We must avoid becoming a committee that spends more time on governance rather than serving members and learning about catfishes. We must avoid resource sapping diversions when it comes to the constitution and

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all that we do within it. To do that, we need to recognise when we become burdened by an eternal string of myopic tweaks and remain mindful of the purpose of the group, as stated in the constitution: “Through regular meetings, open shows, auctions, conventions, quarterly journal, newsletters and the internet, CSG members are invited to share their knowledge, showcase catfish in their care, sell/exchange surplus stock and equipment, support the CSG and interact directly with expert aquarists, explorers and other scientists studying catfishes.”

We have two proposals for change to the constitution this year. One is significant in that it affects the 370+ members we currently have and the 110+ we could have. The other, and let me be clear that this is my own view, is to occupy committee resources by proposing to add a contentious position to the committee for which we have no candidate. In my experience, when a position is created “without portfolio” it means the holder of that position cannot be held to account – you can’t say they’re doing a good or a bad job as the job is not defined. I, along with the chairman and journal editor do not support this proposal and will be voting against it at the AGM.

In my tenure, I look forward to a year when we have no changes to our constitution, and can focus 100% of our energies on serving our membership and furthering the study of catfishes.

*Proposed changes to the CSG constitution at  
AGM 2017*

**Proposal 1. Voting rights are restricted to subscribers.**

*Background:* The present situation is that a member of the CSG is someone who has joined via the [catfishstudygroup.org](http://catfishstudygroup.org) website mailing list. There is no time limit to membership and thus little control over time. Being a CSG member is distinct from joining our Facebook group or a being a subscriber to the journal. Only members are entitled to vote on constitutional matters after one year of membership. This leads to the unequal situation that members have more rights than paying

subscribers – bear in mind that subscribers are important to funding the group’s activities – indeed some subscribers cannot vote. Through Facebook we can reach many more interested parties than the mailing list which can fall foul of email SPAM filters. In two years of operation, the mailing list has gathered 370 odd members, Facebook is just under 700 “members” in a year of operation of the new site.

The proposal is to transfer voting rights from members to subscribers. In effect, this returns to the position pre-2014 where members paid an annual fee and thus membership was annual. Matters concerning constitutional changes would then be communicated with CSG subscribers. The clause stating that members must be so for one year before getting the right to vote on constitutional matters will be removed. One subscription equates to that one member’s eligibility to one vote. The existing list of members (those joining prior to the AGM) via the website effectively becomes a mailing list for interested parties. Refunds of any subscriptions paid by a member who has failed to abide by the Code of Conduct will not be given and the CSG journal will be issued for the remainder of the subscription period.

Given the significant transformation of the group over the past two years, this change has been long considered but postponed due to a dynamic situation. I proposed this change and was seconded by our current editor, Michael Hardman, I must also thank Brian Walsh for his insight and verbal feedback on the finer points of the change.

**Proposal 2: Creation of a President-without-portfolio position**

*Background:* The 2014/15 constitution was a complete rewrite as its predecessor had become antiquated, vague and otherwise unsuitable as a document on which to base our governance. Recognition should be given to Michael Hardman for drafting the new constitution and taking in many changes for all sides. Furthermore, Ian Fuller should also be recognised for the difficult task of shepherding the new constitution through draft and approval stages and for having the foresight that

changes should be made while in the role of President.

As the newly-formed committee began work in 2015, it became clear that the roles of President and Chairman had significant overlap. In order to improve operational clarity, a proposal was made and approved at the 2016 AGM to retire the role of President. Too late to be properly considered for the 2016 AGM, Ian proposed an additional option (in writing received on the 23rd December) such that “The position of President is retained without portfolio.”. However, details surrounding this change matters such as term, appointment, succession, role, etc. were either partially or undefined at the time and have not been made available since. In spite of this, a proposal has now been drafted and is presented here.

The President will be unanimously selected by the committee and offered the honorary title with full membership and without portfolio. The President does not have a committee position or any voting rights other than that of a regular member. The President would be expected to promote the group and attend major functions. The term of the position is proposed to be the

same as that for committee positions, i.e., four years.

There are a few minor alterations to correct the constitution and improve or clarify the grammar.

The constitution will be reviewed and opened to comment every five years. Amendments are proposed to reflect the existing position which is that it is (and always has been) available on the CSG website for review by anyone at any time.

#### Process

Ballot forms will be emailed to members in late December. All completed ballots must be returned to the secretary by 23:59 on 13 January 2017 (local time of the respondent). Members are encouraged to vote early to ensure any issues with their vote can be addressed ahead of the deadline.

Julian Dignall

[secretary@catfishstudygroup.org](mailto:secretary@catfishstudygroup.org)

### Diary dates 2017

Date	Event	Location
15 January	AGM	Derwent Hall, Darwen BD3 0DQ
19 February	Spring auction	Derwent Hall, Darwen BD3 0DQ
17–19 March	CSG Annual convention	MacDonald Kilhey Court, Wigan WN1 2XN
May	Away day with Wiltshire Plecos	TBA
9–11 June	Cory-vention (Ian Fuller)	Brittania Hotel, Wigan WN6 0SR
9 July	Castleford AS catfish & loach show	Lock Lane Centre, Castleford WF10 2LW
17 September	Open show and auction	Derwent Hall, Darwen BD3 0DQ
27–29 October	L-number days	Hanover, Germany
19 November	Autumn auction	Derwent Hall, Darwen BD3 0DQ
10 December	Christmas meeting	Derwent Hall, Darwen BD3 0DQ

More information at [catfishstudygroup.org](http://catfishstudygroup.org) and on [Facebook](#)

## Chairman's report

It's been an exciting, and at times hectic, last three months of CSG activity. The open show and auction was a great success with a fantastic turn-out, large number of entries and an enthusiastic response all-round. Check out my report later in this issue including details of this year's winners.



October saw our first CSG away-day and the committee was well represented with Jools and myself giving talks to a large audience in Livingston and Danny and Ann Blundell flying the CSG flag with our promotions stand. The event was attended by over 60 enthusiastic aquarists from across Scotland and the response and welcome we received made the 8-hour round trip a terrific and memorable experience! It was great to meet new aquarists and learn about the thriving scene north of the border. Special thanks to Jools and our man in Livingston - John Mitchell – for putting this event together and running it so well.

The November auction was well supported with the highest number of lots for the past three years. Everybody filled their polyboxes with rare catfish at the usual bargain prices. I picked up some *Corydoras boesemani* and some black 'schultzei' corys, and only disappointed to be outbid (after £40!) on a spectacular pair of *Ancistrus* L184.

As well as the talk in Scotland and two stints

of auctioneering and auction management, most my time has recently been poured into organizing next year's convention. I took on the role in March and am pleased to say we have a record number of confirmed bookings for this time of the year. We have also secured another three top-class speakers to complement Luiz, Peter, Melanie and Hans. It's not too late to get your tickets and accommodation sorted, so please check our [website](#) for details and booking forms.

The next main CSG event will be the AGM on January 15 2017. This is an opportunity to have your say in the running of the CSG, vote on proposals and personnel, and help secure the future of our group. Upcoming events to look forward to are the Spring auction in February, the Convention in March, another CSG away-day to the southwest of England to join up with the newly-formed Wiltshire Pleco group, hopefully in May, the Open Show in September and our Autumn auction in November. The CSG will also be supporting Ian Fuller's Cory-vention in June, the Castleford AS Catfish and Loach Show in July and the L-numbers days in October.

Back to the fishkeeping and in-between CSG activity I've had some breeding success with *Peckoltia lujani*, *P. compta*, *Scleromystax* sp. CW038 and a second spawning from my *Spatuloricaria pугanensis*, which have proved they are not broadcast spawners as suggested in the article I wrote earlier in the year, the male has brooded his massive clutch of eggs in typical loricariine style!

Mark

[chairman@catfishstudygroup.org](mailto:chairman@catfishstudygroup.org)



*Tachysurus trilineatus*. First place (Jamie Horne, 84 pts) in AOV Coldwater Catfish. Photo: S. Grant



## *Panaqolus claustellifer* Tan, 2016 – the Rossoneri pleco

By Mark Walters



Fig. 1. *Panaqolus claustellifer*. Photo: A. Tanke.

I last wrote about *Panaqolus* in an article outlining the habits of an undescribed species 'L397'. This red banded dwarf woodeater has a reputation as one of the most desirable of the genus, if not one of the most desirable small sucker mouth catfish available in the hobby. I tended to agree with this position, and was very pleased to keep and breed the species.

In 2015 notification of an even more strikingly coloured *Panaqolus* reached me. Not too hard for me to pick up the information, considering like many catfish addicts, I spend an inordinate amount of time on the fishy forums of social media. Neil Woodward of Pier Aquatics informed his customers of the arrival of another L-numbered *Panaqolus* – 'L306'. No common name, no Latin name just images to drool over in Ingo Seidel's L-number bible and online.

A few pairs had already been snapped up before I managed to travel across to Wigan, but there were plenty to choose from, although any distinction between sexes was largely down to guesswork. I left with 2 'pairs' and plenty of

questions to answer when my better half scanned my next credit card statement.

A bit of further research indicated their wild habitat, which had been visited by fellow *Panaqolus* enthusiast and CSG conventioneer Andreas Tanke. Andi's account included some great images of freshly caught L306 and their woody habitat. Online, I learned of a few existing keepers and breeders who coveted their L306 as a favourite species in their tanks. Indeed, it seems that in more recent times, L306 has started to supplant L397 on the wanted list of many fishkeepers. A few months after my first purchase, I picked up another specimen from Pier Aquatics to add to the group.

After quarantine, the fish were added to my *Panaqolus* centralised system, comprising 6 x 120L tanks served by a 100L sump. The amount of wood in the tanks keeps the water a medium brown colour, which no amount of rainwater changing seems to dilute! At a temperature of 27°C and strong through-flow, conditions seem to suit the numerous *Panaqolus* species in the set-up.



Fig. 2. *Panaqolus claustellifer*, male. Photo: M. Walters.

After a few months the males in the group (probably three out of the five) started jostling over the numerous clay caves I had included and I noticed the first trappings of females. The first evidence of breeding was the appearance of a clump of eggs ejected from one of the caves. Typical of *Panaqolus*, the eggs were large in comparison to the parent fish, and numbered around 20–30. Left with no option, I set up a small hatching tub with strong aeration and a drop of methylene blue, to reduce bacterial or

fungal attack. The eggs developed and hatched after 5 or 6 days and I was pleased with a lively bunch of wrigglers.



Fig. 3. *Panaqolus claustellifer* egg mass. Photo: M. Walters.

I have had issues with raising *Panaqolus* fry in several species. A few days after the yolk sac is fully absorbed, the fry start to rapidly swell before dying. This usually coincides with the start of feeding, and I assume is a consequence of not being able to assimilate first foods effectively. From my previous experiences, I had only added some small pieces of bogwood and spirulina powder for the first few days. Despite the careful feeding regime, the same was true for this batch of L306 and shortly after their egg sacs were close to being fully absorbed they started to 'bloat' and die.



Fig. 4. Artificial raising rig and newly-hatched larvae (inset) of *P. claustellifer*. Photos: M. Walters.



Fig. 5. *Panaqolus claustellifer* shortly after collection. Photo: A. Tanke.

In a subsequent spawning episode, some six weeks later, the male retained the eggs until hatching, and although the remaining clutch was not as large, he successfully raised a small number of youngsters beyond the critical stage. I suspect the fry benefit from the close association with the parent fish, and probably assimilate essential gut bacteria to help them digest their first foods. Once free swimming, I didn't worry too much about the young fish which dispersed within the tank and developed normally.

From these experiences of artificially raising *Panaqolus* fry I would advise not feeding any dried or prepared foods for a full week after the egg sac has been absorbed. Instead I would recommend only providing wood, leaf litter or mulm from the parent tank, with the intention of

providing essential microbial flora and fauna to help 'populate' the digestive tract.

The young fish, if anything, are actually more striking in colouration than the adults. The paper describing *P. claustellifer* in 2016 also recognises this fact from wild specimens. Although the direct interpretation of the species name alludes to a keyhole shape in the head pattern, a more appropriate common name would be the 'red and black pleco', or, as coined by Mike Hardman, the snappier 'Rossoneri pleco', borrowed from the supporters of Italian football giants AC Milan, who famously sport a first team shirt of alternating red and black bars.

The paper by Milton Tan and colleagues (2016) is of course the first point of reference for anybody wanting to find out more information about this fish, the eleventh described species of *Panaqolus* (there are plenty more undescribed species). Described from the Rio Takutu, it is regarded by the author as a rarely collected species, locally uncommon and very rarely available in the aquarium trade. The Takutu River is a medium-large (25–50m width) river system which transitions from blackwater to whitewater and has a substrate of mainly sand with stretches of lateritic rock and areas of moderate rapids with boulders. Individual *P. claustellifer* were found in shallow whitewater cataracts along the Takutu river. Surrounding

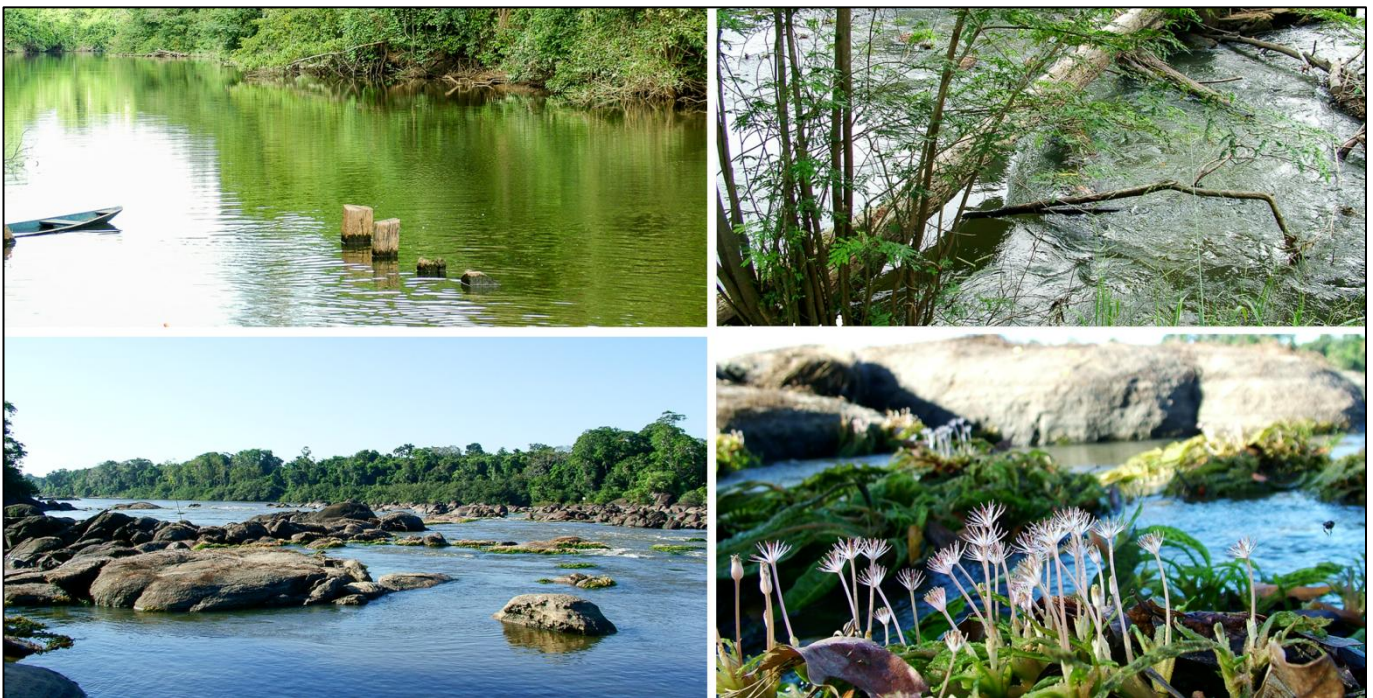


Fig. 6. Habitat diversity on the Rio Takutu, home of *P. claustellifer*. Photos: A. Tanke.

habitat consisted of a narrow strip of gallery forest, but mostly savannah. The species is particularly interesting as it is the first *Panaqolus* described from Guyana. Biogeographically, the authors suggest that the ancestor of this species originated in the Amazon river and dispersed "...to the Takutu River after the Amazon captured part of the Proto-Berbice river system". The only other Guiana-shield *Panaqolus* are *P. maccus* from the Orinoco in Venezuela and *P. koko* from the Maroni along the French Guiana/Surinam border, although differences in the body shape and dentition of *P. koko* suggest it may not belong to *Panaqolus*.

My specimens have remained relatively small after two years in captivity, although the paper describing the species references a size of up to 11cm, akin to other small-medium species in the genus (e.g. L169, L397), as distinct from small species (e.g., *P. maccus*), medium species (e.g., *P. albivermis*, *P. albomaculatus*) and large species (e.g., L453). In a recent molecular phylogeny of Loricariidae (Lujan *et al.*, 2015) *Panaqolus claustellifer* (then labelled as *Panaqolus* n. sp. Tacutu L306) was found to be sister to *P. gnomus*, a species endemic to the Pastaza and upper Marañón basins, with *P. Nocturnes* from the Santiago and Pastaza basins of the upper Napo system sister to them.

Sexually-mature fish can be easily separated on the basis of well developed odontodes adorning the male, and females are more full-bodied. I have cared for my *P. claustellifer* as per other *Panaqolus*, with plenty of flow, bogwood and a vegetable diet with occasional higher protein foods. The observations on natural habitat suggest they are less associated with submerged wood debris than many of their close relatives, although this could be as much to do with habitat degradation as their preferred environment.

As described in the paper, *P. claustellifer* is a very uncommon species in its natural habitat and rarely available to hobbyists. From my experience, it has a relatively low fecundity and the young can be difficult to raise. I expect that supply of wild specimens will continue to be limited, with only sporadic availability of tank bred specimens providing a realistic opportunity to keep this species.

### References

- Lujan, N.K., J. Armbruster, N. Lovejoy, and H. López-Fernández. 2015. Multilocus molecular phylogeny of the Loricariidae (Pisces: Siluriformes) with a focus on subfamily Hypostominae. *Molecular Phylogenetics and Evolution* 82A:269–288.
- Seidel, I. 2008. *Back to Nature guide to L-Catfishes*.
- Tan M. 2016. A new species of *Panaqolus* (Siluriformes: Loricariidae) from the rio Branco. *Neotropical Ichthyology* 14: 2.



Fig. 7. Freshly-caught *P. claustellifer*. Photo: A. Tanke.



# CATFISH STUDY GROUP

## Convention 2017

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## Catfish collecting in the río Xingu (part two)

By Julian Dignall



Beach camp on the Xingu above Altamira, where *Corydoras* streamed through the warm shallow water. Photo: J. Dignall

*[Editors note: In the first part of this article published in the September issue of the 2016 journal, Julian provided a detailed account of his time spent travelling and fishing on the rio Xingu and one of its main tributaries, the fascinating rio Iriri. If you're a new subscriber, you can access the first part via the [CSG website](#).]*

After several days on the river, the intoxicating fish diversity was often sobered by the reminder that this system will soon be modified by the insatiable appetite for “progress” that our species is typically guilty of. However, the tendency to dwell on this depressing reality was lifted by the experienced, knowledgeable and great company I found myself in. Of course there were the ichthyologists, Drs. Leandro Melo de Sousa and Mark Sabaj, leading lights in a team of researchers from The Academy of Natural Sciences of Drexel University (Mark's institution), Texas A&M University, Instituto Nacional de Pesquisas da Amazônia in Manaus, and Universidade Federal do Pará (Leandro's place of work) in Altamira. Also keeping spirits high was legendary fish importer Oliver Lucanus who never missed an opportunity to recount tales of high adventure seeking out new ornamental fish species across the globe.

Travelling with Oliver were Drs Margaret Kalacska and Pablo Arroyo from the Department of Geography at McGill University in Montreal. While Leandro and Mark are ichthyologists and you'd expect them to work on the river, Margaret and Pablo brought something new to our travels. They'd recently been to northern Tanzania (Lake Natron, Chemka Springs and Lake Chala) with Oliver and used airborne drone technology and satellite imagery to record and map the terrain from the sky. Their work showed a chronology of land use and environmental changes putting pressure on endemic cichlid habitats. While my “PlanetXingu” charity fundraiser had funded such a drone for Altamira University, to have it augmented by such high-end kit and expertise for this trip took us to another level. Margaret's interest in remote sensing is in mapping aquatic ecosystems from the air to determine habitat extent and change while Pablo, an ecologist, is interested in mapping species diversity.

Mapping the same area on several occasions can show us how habitat is lost and re-gained over time and also how the landscape around the aquatic ecosystems changes. Land-cover and land-use changes such as deforestation, agricultural land expansion, urban expansion and human activities such as water abstraction have significant and negative impacts on aquatic



The highly-structured streambed offers Xingu plecos and other fishes an impossibly complex environment in which to feed, hide and breed., and seasonal rain cycles restrict and release this habitat during the year; the Belo Monte dam will condemn the Volte Grande region to a permanent (or at least prolonged) low-water scenario, and seasonal triggers for fish reproduction will be affected. Photo: J. Dignall

ecosystems. Drone imagery can provide real-time monitoring of freshwater fish habitats while at larger scales satellite imagery provides a more long-term perspective. In the specific case of the Xingu, much of the area being mapped will be inundated by the mega dam reservoir or greatly diminished as the river water is diverted to feed the dam. Pablo, Oliver and Margaret's research (Fish+Forest Project) generates tools that are readily deployable in the field at low cost, allowing for the ongoing monitoring of habitats crucial to the survival of specialized endemic fishes. Their goal is to determine the amount of endemic Xingu fish habitat that will be lost as the mega dam reservoir is completed.

#### *It's not just l-numbers: corys and whiptails too!*

Rocks and islands shape the flow of water and there are long sand banks and beaches where soft sediments accumulate. From dusk onwards, stingrays like to hang out here but during the day this shallow clear water is home to other things. Indeed, the flow of water over the rocky base of the Xingu river bed throws up all sorts of unusual spots. During the 6<sup>th</sup> day on the river, we found a beautiful spot where in the middle of an island which had trees and bushes, was a low

waterfall over rocks emptying into a sandy pool with a lot of leaf litter cover. This is relatively unusual in the Xingu, so we dived in to see what could be found in this sheltered harbour.

Even at about two metres deep, the crystal clear water made viewing the bottom of the pool easy. Medium sized *Myleus* occupied the middle of the water column. I took some video of them and other characins such as *Moenkhausia heikoi* and some larger *Brycon* tore around trying to avoid becoming our lunch. My eyes were attracted to movement near the bottom where a pair of really good sized *Geophagus* (probably *G. argyrostictus*) were prospecting a long rock as a place to start a family. I spent 10 or or 15 minutes hanging at the surface, slowly breathing through my snorkel watching them. Then a branch in the leaf litter moved. It was, I could see now, not a branch but a foot-long whiptail. It's large dark brown blotch and sandy colours making it a perfect match for the brown leaves and sand it had very successfully hidden in plain sight upon. *Loricaria birindellii*, only described in 2010 is an occasional export form the Xingu and is an attractive and sturdy species that should not be too hard to breed. All *Loricaria* are lipbooders and as such the male carries and



*Moenkhausia heikoi* gather in the slower water of pools and in the shade of large stones. Photo: J. Dignall

defends the eggs very effectively. You would simply need an aquarium with a large footprint. Setting up these *Loricaria* in a 120x45cms or larger aquarium with soft sand, good filtration and some leaf litter would be an interesting set-up and more or less all they need for breeding. While raising the fry is a challenge in such an aquarium, there is a lot of surface area in the leaf litter for the fry to find food and *Loricaria* fry are easier to feed than many other genera of the Loricariinae (whiptails, etc.) as they eat what the adults eat from an early stage.

Nearby, we set-up camp on a sandy beach on another of the Xingu's uncountable islands. A small rivulet, no more than six inches deep runs through the beach. It is, literally, teeming with *Corydoras* sp. C022. I set-up an underwater camera on a stick dug into the sand and record of lot of video of *Corydoras* doing what they do in the wild. This reveals that they are actually swimming quite hard in the current despite looking stationary from above.

At least for catfish keepers, the most famous species from the Xingu is the zebra pleco, *Hypancistrus zebra*. Much has been written

about this high contrast, highly prized and highly endangered species. Thankfully, it is being bred commercially and by aquarists all over the world. Its future in captivity looks better than that in the wild as the part of the river Xingu it lives in is being drained to feed the Belo Monte mega dam. Keeping and breeding this emblematic fish is well documented, so I'd like more to recount a little on diving for the zebra pleco.

Marking the northernmost range of the zebra pleco is a rudimentary signpost; a plank of wood wedged vertically in otherwise nondescript rocks. The water here is deep enough that one has to cling to rocks to avoid being swept away that current while not white-water is strong enough to move you a half a dozen meters in a few seconds. Losing your grip in such a spot means you have to swim very hard to get back to where you were. In this environment, snorkelling to see a fish that is between 1 to 5 metres below the surface is at best inelegant. Here, there is almost only granite. It cracks in such a way that huge fissures between 1–3 cms appear right down the otherwise solid rock face. They often run right through the huge boulders in the river. It is in these tight spots that the zebra pleco can be found during the day. My first few attempts at looking into these nooks and crannies were surprisingly successful. I could make out *Pseudancistrus asuirini* and also *Ancistrus ranunculus* and either *Parancistrus* or *Spectracanthicus*. The next ten or 15 minutes or so were spent in an epic battle with the current in which I bobbed up and down searching for the black and white holy grail.

One of the fishermen beckoned me over excitedly shouting, "zebra, zebra, aqui!" to a rock about seven m downstream. In my excitement I quite forgot about the current and arrived with the fisherman rather more quickly than I had anticipated. With effortless skill he caught me and helped me back into a sensible orientation. I dived to look for the pleco but I only could get as deep as the fisherman at the very end of my breath. I did this again and the fisherman gave me his compressed air line so I could breath. I was head down with the fisherman exchanging breaths of air and looking at a zebra pleco. It shone in the gloom. The fisherman left me with the airline and I slowed my breathing, and took



some video of the pleco. But there were others in the group and with better photographic equipment than me. So I rose to the surface being careful to exhale compressed air as I rose. Injuring my internal organs even in 5m of water was something I wished to avoid. It was a brief encounter but I was elated to see this fish in nature and understand so much more about it just by a fleeting observation.

As I gather control of myself I was aware that there was a helicopter in the air above us. It had passed us and was circling an island in the river and returning our way. I heard gunshots from afar. Was the helicopter shooting at us? Many thoughts passed through my head. Were they trying to drive us off? Had we become confused with poachers? We did not know what was going on. It felt prudent to get close to a big rock I could hold on to. Others got near the tethered boat or just watched from wherever they were. The helicopter passed us and more shots were fired. This was a little tense. Thankfully the helicopter passed us, fired one more shot and headed off. We found out later it was a police helicopter shooting at a murderer on the run who had taken refuge on the island. I was glad we hadn't stopped there for lunch.

All of this excitement was soon replaced by the excitement of a fishermen catching L082, a pretty and odd loricariid also limited in range

like the zebra pleco and therefore highly threatened by the dam. This is an interesting species because it more or less fits the bill in terms of belonging to the genus *Scobinancistrus*, but it is stockier with a smaller adult size and a thicker caudal peduncle. It is another example of the level of (undescribed) diversity among Xingu plecos. A mostly carnivorous species with large orange-tinged spots on a black background. L082 has recently been bred in Europe, so some hope exists for this species in captivity too.

What predates on zebras? Well, I think they are too small for nature's fishermen (e.g., otters and cormorants and any remaining caiman) so it seems likely that larger fishes, especially *Crenicichla* are their main predator and this is why the small plecos (either small species or the young of larger species) have evolved to be flat enough to live in crevices during the day and venture forth at night when the majority of visual predators are sleeping.

*Hypancistrus zebra* may become extinct in the wild in the next few years. It is unlikely to live in the flooded reservoir upstream of Fortaleza. Maybe small populations will survive in the 100km of river that will have, at best, 20% of the natural water low and probably no seasonal variation on which to base their reproductive activity. The considerably rarer L173, a deep water species of *Hypancistrus* from the same area is not likely to have much deep



*Baryancistrus chrysolomus* (L047, the magnum pleco) with unusual spotted colouration. Photo: J. Dignall

water left to live in. If there is enough water left in the part of the river cut out by the dam, some may survive and let's hope so as that is part of an area for which a large gold-mining deal has been struck. The pessimist in me would bet it will be bone dry to facilitate the human demand for precious metal over the coming years.

Much of the Xingu that is either a day or two's boat ride up or down stream of Altamira is pretty fast flowing clear water. Often it is shallow enough to wade in while elsewhere it can be tens of meters deep. However, there are many other biotopes to be found. Where the clear water slows to near standstill in any area it can quickly bloom with algae. While it can be found in faster flowing water, LO47, the Mango or Magnum Pleco (*Baryancistrus chrysolomus*) appears to favour such low-flow habitats and it is certainly coloured to fit right into the greenish soup of the near still waters where it can be found.

While a similar shape, size and general attitude of its more commonly encountered cousin the gold nugget pleco (*B. xanthellus*), the mango pleco differs in so far as it's a bit more of a herbivore than a detritivore. It is also lime green with banana yellow edges to the unpaired rayed fins. In the aquarium, the difference in diet doesn't make much of a difference beyond making newly imported individuals a shade easier to acclimate with typical catfish sinking pellets and the like. They're also more tolerant of sub optimal water conditions. In short, an easier pleco to keep but that shouldn't stop you from making frequent water changes (they eat a lot, and therefore produce a surprising amount of waste) and adding extra aeration if you're not setting them up in a tank with power filtration. A strong turnover may not be necessary, but low levels of dissolved oxygen can spell disaster for *Baryancistrus* that like to be kept warm at around 27-32 °C.

This might lead you to the conclusion they would be a good addition for a discus tank. However, they could suffer from bloat if they eat too much discus food. A better discus tank option would be the more carnivorous *Scobinancistrus* spp. that are found in the Xingu (*S. aureatus* or LO48) or similar species for the warmer north-flowing Amazon tributaries such as the Tocantins and Tapajos.



*Squaliforma emarginata* (LO11). Photo: J. Dignall

Photographing or filming LO47 underwater in green water was very challenging. I don't think anyone got a good shot due to the fact the water was 2-4 m deep and rather turbid. However, the fishermen we were travelling with did manage to collect a few. *Squaliforma emarginata* (LO11 is given to those found in the Xingu) is also present in the more sluggish waters where even foot long adults hang out in less than a metre of water column. These are out and out omnivores, hardy and as easy to keep as common plecos. They do grow quite large, but are elongate, colourful (sporting a red to orange flash in the lower caudal fin lobe) with an attractive black spotting pattern over a sandy beige base colouration. A really nice medium sized pleco that will work well with small or medium sized fish up to and including something like an oscar (*Astronotus ocellatus*). Meanwhile, back on the Xingu, someone spotted a large electric eel in the murky green water and I called it a day. While I'd love to see one of these large fish in the wild, I was certain I'd rather do it in water where I could see where I was standing even if it was still.

At the other end of the scale, are the crashing cascades and cataracts of the Volta Grande. This is where the river drops many meters over less



Habitat of juvenile *Panaque* cf. *armbrusteri* Photo: J. Dignall

than a mile and the result is roaring torrents and highly oxygenated warm water. Snorkelling here was awesome, but challenging in so far as you had to hold on to avoid being gently (at first) pulled downstream in the direction of the nearest waterfall. I lost my grip a couple of times and the acceleration of the pull of the water I experienced made me much more careful. It is such an intense assault on the senses, the roar of the water, the amazing plethora of aquatic life, the clear warm water and the hot tropical sun multiplied by the excitement of a fishy find or the capture of some photograph or memory. And so it was when I first found a Xingu *Panaque*. I was just hauling myself out the most pleasant 30 minutes or so of sitting in a pool of medium current watching gold nugget plecos, several species of tetra, a family of pike cichlids and the old huge *Retroculus* swim by. As an aside, the rapids dwelling cichlids (in this case, *Retroculus xinguensis*) are a great watch underwater. Adults were not too frightened by my presence when I stayed static in the water and watching how effortlessly they navigated strong current was fascinating. After a while, they got used to me and started looking for food or defending territory – even for the hardcore catfish fanatic, it was a magical experience. So, I was thinking about cichlids when I saw something move on a rock near the water surface. I drifted over. It took me a long time, maybe tens of seconds, to realise I was looking at a 10 cm *Panaque*. It was very well camouflaged, the black lines and sage green base colour made it hard to make out even from a meter away. I saw it eating the roots of

submerged river weed and a rather large penny dropped.

Compared to other places you find *Panaque*, there is very little wood in the Xingu rapids. Sure, there is the odd bit here and there but most of it has long been blasted downstream. I've been to the type locality of the Royal Pleco, *Panaque nigrolineatus* in Venezuela – there is so much wood in the water you can hardly move and indeed collecting those plecos is not much harder than scraping a net along a piece of barely submerged wood. But in the wood deprived Xingu, many, myself included, have pondered what these fishes eat and this was always a bit of a mystery. Prior to the description of *Panaque armbrusteri* from the Tapajos, Brazilian *Panaque* (Royal plecos, not the smaller *Panaqolus*) were known as LO27 often with an a,b,c or d suffix (e.g., LO27b). Attempts to split them up into groups only made sense once we understood where they came from and the differences between young and adult forms. There are, probably, close relatives of *P. armbrusteri* in the Araguaia, Tocantins and Xingu. They appear with fantastic and confusing tradenames like Teles Pires Royal pleco, Platinum or, my favourite, Royal Thunder pleco. I think most if not all with end up as new species and certainly the one I was swimming with in the Xingu is the most different of all large striped *Panaque* from the Venezuelan type species. It is flatter especially when young, it doesn't have classic spoon shaped teeth when older and it was a revelation to me to figure out this is because it eats, at least some of the time and as a juvenile at least, river weeds and not wood.

As we returned to the boat I was still pondering this discovery. I further realised that in the wet season when the river rises above the rocks we had been walking on, that all that river weed would be gradually submerged, slowly exposing a *Panaque* feast to the awaiting hordes. It was sobering to also think that, because of the dam, this was the highest water this part of the Xingu was ever going to see again. It would likely fall further while also not being subject to the annual changes in water throughput. My mind was still miles away pondering the fate of the Xingu Royal pleco when it very abruptly came back to worry rather more directly at my

own fate. We were pushing back upstream in rapids and the outboard motor had cut. It was not for re-starting. We were drifting backwards and picking up speed. Nate, one of our local fisherman, instinctively dived (without regard I thought later to hidden rocks) into the water and swam like a man possessed to the nearest large rock. The boats pilot expertly threw him some line and, with a few heart stopping slips and pulls, managed to secure our boat to the rocks. He pulled the boat to and we got out. It was a nice spot, which was just as well as it looked like we may be visiting for a while.

While I could explain how we got out of that pleasant pickle, I should explain a little about keeping the Xingu Royal pleco in captivity. It will still “have a go” at wood, but this is a fish that will dine out on sweet potato or similar vegetable with gusto. Otherwise, it’s a classic *Panaque*. Juveniles have rusty red pectoral fins and reddish eyes with a translucent crescent shape in the caudal fin; foot long plus adults are incredibly impressive fish that will hold a large territory which they will defend robustly. As adults, they appear to have pale olive green stripes on a black background (as opposed to the

other way around in *P. nigrolineatus*) with fin rays picked out in the lighter colour on otherwise solid black fins. Water quality is important, but these fish are hardy if well fed. Upon buying them, a quarantine tank is a good idea where you can feed a lot and water change a lot especially if, as many are, the fishes have not eaten well for a few weeks.

There are some underrated and not commonly exported plecocs from the region too. For example, *Peckoltia feldbergae*, described by Renildo de Oliveira, Lucia Rapp Py-Daniel, Jansen Zuanon and Marcelo Rocha in 2012. Only three years later, it was moved by Jon Armbruster, David Werneke and Milton Tan to another genus, *Ancistomus*. Such shifts are common in the world of plecocs because there is a remarkable amount of diversity (and thus data) which is only now been fully analyzed. Before being described, we knew this species as LO12 and LO13 (a young LO12). Both are very similar to L163 from the Tocantins. *Ancistomus* are more elongate than *Peckoltia* and this is a pretty example with darker spots on pale cream to sandy coloured body with an attractive orange seam to the edges of their major fins. Hardy and



*Baryancistrus* sp. “Belo-Monte” habitat and in-situ (inset). Photo: J. Dignall



*Baryancistrus* sp. "Belo-Monte", adult male soon after capture. Photo: J. Dignall

easy to keep, it is only because there are many more sought after species in the Xingu that we do not see these fishes more often.

A Xingu pleco I've never seen for sale in the trade is a green species of *Baryancistrus* endemic to the area around the Pimental dam. It is the same shape as a gold nugget pleco (*B. xanthellus*) and appears to do pretty much the same things. I call it green, but it's greenish with a bit of brown – rather like common cushion moss we find in the UK. I encountered this fish snorkelling in strong current. Adults were at home in about 1m of water and less skittish than their spotted cousins. Perhaps the green colouration helps camouflage them. In this locality we also saw a river otter eating something that looked suspiciously like a large pleco – if so, surely these larger plecocs do not have many other natural predators and certainly none that occur in great numbers. The green *Baryancistrus* has no l-number and will likely be wiped out by the dam, possibly passing into history with very few people even knowing it was there.

There are areas of the Xingu where one can find submerged wood. Many of the larger islands have trees and they can be found fallen in the

water. Where the current is sheltered, perhaps by a natural inlet, the trees remain. Pretty much anywhere in tropical South America, sunken wood means you will find a representative of the genus *Panaqolus*. They eat wood, they live on it and they breed in and around it. Further downriver from the town of Vitoria do Xingu we edged into such a spot. There was little current and several fallen tree trunks ran from the island edge into the water. On entering the water, I could see this was a much more dangerous place to snorkel than the rocky places we had been before. There were many logs and branches underwater, just a little carelessness could get you snagged or trapped. Furthermore, there is a common species of palm tree in the Amazon that has 2-3" spines all up its trunk. While wandering around the rainforest, they are relatively easy to spot and avoid. While swimming among them, they are especially tricky.



*Panaqolus* sp. L398. Photo: J. Dignall

However, I had only been in the water ten minutes or so when I saw a few familiar shapes darting about the submerged logs. Soon enough I was watching L398, the Xingu *Panaqolus* up close. As these fishes will rarely leave the log they are on, it is a simple matter of swimming around the log to gain a good vantage point with which to observe them. I found one close enough to the surface that I could watch it while I was breathing air through my snorkel. After a few minutes it forgot about me and resumed gnawing away at its home industriously. I've written before about keeping *Panaqolus* in the aquarium. In short, all the wood waste they produce is hard work for filters but they are otherwise easy to keep in a tank with plenty of wood. Try collecting your own lichen enriched branches from local woodland – they love it!

The blockbuster movie Avatar was written and directed by James Cameron (Titanic, Aliens, Terminator etc) and starred Sigourney Weaver. Big Hollywood names but ones also that have spent time in the Xingu trying to bring the

spotlight of fame normally shone on them into focus on the plight of the area and particularly the local indigenous people who have been moved off their land as part of the dam project. The movie Avatar is a direct representation of the situation in Brazil – written by someone who knows the issues well – but even such high profile attention only slowed the dam's completion.

My time in the Xingu came to an end. Watching my last sunset my sadness at leaving was multiplied by the perilous future all these fishes faced. The political power and perceived benefit to the nation of a dam that would be as inefficient as it would be destructive to the surrounding land did not make me feel great about being human. However, other humans are making great progress in captive breeding efforts of many of the species I encountered and at least some of them seem fit to escape extinction as their part of their river runs dry.



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## A confirmed case of hybridisation between *Corydoras panda* and *C. weitzmani*, with fertility of the hybrid offspring (Siluriformes: Callichthyidae)

By Michael Hardman



Fig. 1. Female (left) and two male (center and right) hybrids of an accidental spawning of *C. panda* and *C. weitzmani*. Photo: M. Hardman

Those of you that have read my articles or seen my talks will know that I'm deeply interested in the diversity and evolution of catfishes. As well as sampling catfishes in nature and studying their variation, I've also collected DNA sequence data to reconstruct their evolutionary history. This kind of work aims to understand how that diversity came into being and what that can teach us about natural systems.

Understanding the mechanisms by which one species becomes two is one of the main branches of research in evolutionary biology and much of it is based on the work of Charles Darwin. Historically, researchers have worked within a framework in which a species composed of several interbreeding populations are divided – perhaps by the rise of a mountain range – and

allowed to evolve separately to eventually be recognized as two distinct species. This is a classical model of *sympatric speciation* and seems to be the main mechanism that hobbyists are familiar with.

However, natural processes are as diverse as the world they have created and biologists have also demonstrated that new diversity can be generated by *different* species mating to create *hybrid* offspring. Another branch of evolutionary biology tries to understand the factors that keep species from hybridising and thereby maintain diversity rather than allowing it to continually reset the variation that may have evolved.

Factors that prevent hybridisation can work at the level of the parental species (e.g., they don't mate in the first place), the hybrid embryo

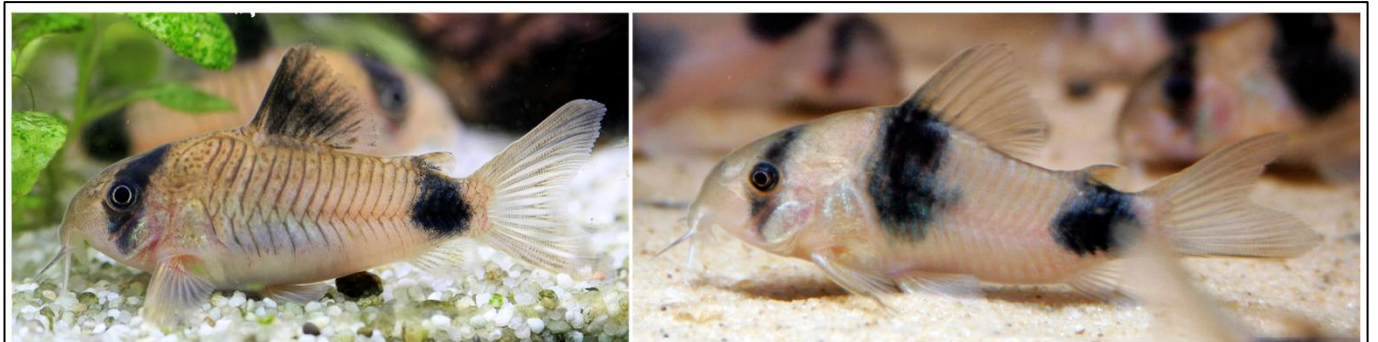


Fig. 2. Parental species of the hybrid cross: *C. panda* (left) and *C. weitzmani* (right). Photos: Dornenwolf, Creative Commons (*C. panda*) and M. Hardman (*C. weitzmani*)



fails to develop, or the hybrid offspring are infertile so end up being nothing more than a side-note in evolution. But if the hybrid offspring are fertile, some argue that speciation can be instantaneous; that two different parental species (let's call them *Corydoras* sp.A and *Corydoras* sp.B) mate and produce a viable hybrid offspring (*Corydoras* sp. X). This speciation mechanism is interesting because it allows diversity to increase rapidly and mixes characteristics from both parental species in the hybrid. This means that the hybrid is a new player in the community and natural selection will either promote this new animal or kill it off, depending on how its mix of characters fit the environment. These characters could be size-at-maturity, dietary preference, microhabitat selection, predator avoidance, crypsis, etc.

There are lots of examples of hybridisation taking place in the natural world, and many of them occur in environments where the intricate mechanisms of mate recognition are disturbed by human activities. It's intriguing to think about such examples being a pseudo-natural phenomenon by which evolution adapts an existing community to the disturbed or newly-created environment.

There are also examples of hybridisation taking place long before humans started changing the ecosystem, so we should remain mindful that this mechanism might be more important than previously realised.

Like many of us, I spend time on social media and often react to posts concerning hybrid species in the aquarium hobby. Many of these are artificially created by hormone induction, where ripe females are stripped of their unfertilised eggs and mixed with the sperm of a donor male from another species. There is a lot of controversial research in this field as it is an important aspect of fisheries management and conservation programs. Most aquarists are familiar with hybrid *Synodontis* reportedly created in fish farms of eastern Europe. After an initial boom, the market collapsed for these new and often beautiful *Synodontis* as hobbyists learned of their artificial origin.

Many aquarists dismiss hybrids as man-made monstrosities and discourage other aquarists from keeping them and especially from allowing their fish to hybridise in the first place. I'm a

little more open-minded and want to hear what they have to say about evolution and genetic compatibility.

Catfish keepers that follow this kind of thing will know that *Corydoras* and *Hypancistrus* hybridise with other species in their respective genera, both in captivity and the wild. These genera are also characterized by highly-variable species that are often difficult to draw the lines between; put another way, where one form (or species) turns into another.

I keep both *Corydoras* and *Hypancistrus* to observe their behaviour and development, mostly in single-species aquaria ranging from 50 to 500L in volume. I also have two 200L plastic ponds which I use to observe *Corydoras* behaviour from above and to grow out juveniles. While reorganising the fish in early 2014, I added a small group of *C. weitzmani* to one of the ponds that contained a spawning group of *C. panda*.

These two Peruvian species (Fig. 2) are well known in the hobby, especially *C. panda*. They both spawn in the typical corydoradine style and hide their eggs in plant roots and other filamentous structures such as java moss or polyester spawning mops. Typically, *C. panda* produces 1–2 rather small eggs (1–2mm diameter) at a time whereas *C. weitzmani* produces 1–2 larger (2–3 mm) eggs. Both species have a reputation for eating their own eggs, but I found that by having several mops on top (0-5 cm from the water surface) of a large foam filter, *C. panda* left their eggs unmolested and allowed me to raise hundreds of them over a few months.

Soon after adding the *C. weitzmani* to the 200L pond, I began finding large eggs mixed in with the small ones in the spawning mops, and assumed the *C. weitzmani* were spawning too. I removed all the eggs and incubated them in the usual way (1L aerated aquarium water + 2–3 drops of an antimicrobial solution containing methylene blue, acriflavine and malachite green [FMC by Zoolek]). Once hatched, larvae were pipetted into 7L filtered plastic tubs and raised on microworms and eventually powdered tablet food.

After several weeks, the young corys were transferred to a 50-200L aquaria for grow-out. As they grew, they became more recognisable as



Fig. 3. Mixed group of juvenile *C. weitzmani* (left and far right), *C. panda* (centre group of four), and a hybrid (large, upper right).  
Photo: M. Hardman

*C. panda* and *C. weitzmani*, but there were also a few fish that were noticeably different from but with obvious similarities to both (Fig. 3). Hybrids!

I removed the putative hybrids and raised them separately, regularly checking for others in the grow-out tanks. Of the ten hybrid fish recovered, six survived... and thrived! The fish kept their colouration, grew and matured into one female and five males (Fig. 1).

Of the two parental species, the hybrids more closely resembled *C. panda* but expressed the black blotch at the base of the dorsal-fin spine – a character of *C. weitzmani* – although not to the same extent (compare specimens in Fig. 3). What struck me was that the hybrids were all quite similar to each other (Fig. 1), and had I encountered them in an aquatic retailer or fish importer holding tank, I would assume they were an undescribed species similar to *C. panda*.

The hybrids were maintained in a 60L aquarium and eventually began spawning. I quickly realised this would be an important

opportunity to test their fertility. The hybrids spawned similar to the parental species and eggs were small (like *C. panda*) placed in spawning mops suspended from the surface (Fig. 4). Spawning behaviour was more vigorous than I had seen in *C. panda*, but comparable to that of *C. weitzmani*. I also witnessed some egg predation by non-spawning males in the group.

I began harvesting eggs (ca. 5–25 eggs per spawning event, i.e., per female) when I noticed they had spawned, and incubated them as described earlier. Initially, all eggs failed to develop but this is often the case for the first few spawns of most species, and I continued harvesting and incubating eggs while the hybrids were happy to provide them.

Eventually, six eggs from a particularly large spawn (22 eggs harvested) developed and hatched into what appeared to be healthy larvae. They were transferred to their own clearly-labelled raising tub where they received the same care as other young corys. I was especially careful to keep them separate. Unfortunately, two of the six fry died over the next couple of weeks – but I've experienced a similar mortality rate at this stage with other corys, so I can't say it was due to them being the offspring of hybrid parents. I added some more fry that had hatched from subsequent spawnings and eventually moved the small corys to their own grow-out aquarium to monitor their development (Fig. 5).

After a few months, it became clear that the F1 hybrids expressed the dorsal-spine blotch of their hybrid parents less (if at all) and had taken



Fig. 4. Eggs spawned by *C. panda* X *weitzmani* hybrids. Photo: M. Hardman

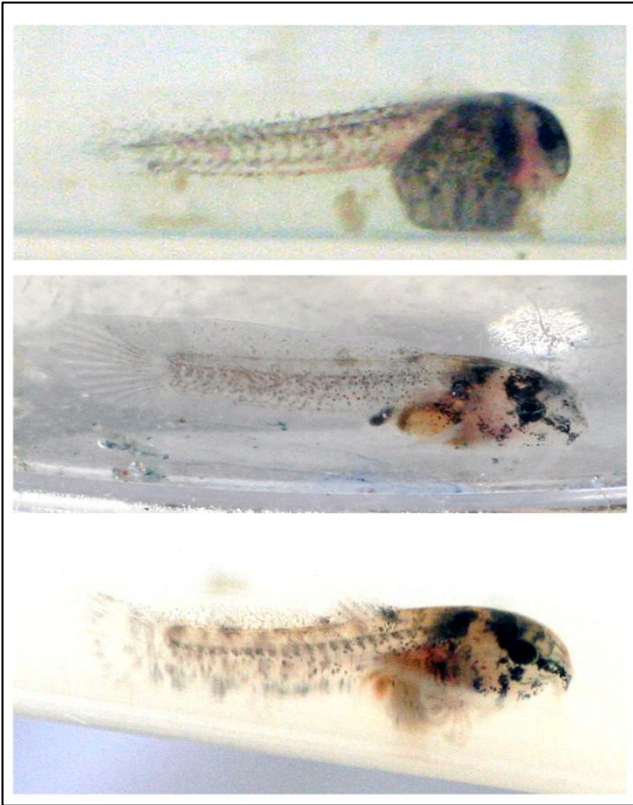


Fig. 5. Development of *Corydoras* F1 hybrids (upper: 1 day after hatching; middle: 1 week after hatching; lower: 2 weeks after hatching). Photos: M. Hardman

on the appearance of *C. panda* (Fig. 6). These fish remain in my aquarium and have yet to spawn, but are otherwise healthy corys that look and behave similar to *C. panda*... but what are they? They might look like *C. panda* but they surely contain DNA from their *C. weitzmani* grandparent. I suspect that the F1 hybrids could spawn with each other or with *C. panda* – perhaps also *C. weitzmani*.

What does this mean for an evolutionary biologist? Well, the hybridisation took place in captivity under artificial conditions, so it cannot be assumed this would take place if populations of *C. weitzmani* and *C. panda* were to encounter each other and begin

hybridising. Although the precise distributions of these species are not fully known, their current ranges are several thousand river kilometers apart and it seems unlikely they overlap at their natural limits, but maybe.

Does this mean that *all* corys can hybridise to create fertile offspring? Certainly not. The genetic work of Markos Alexandrou, Martin Taylor and colleagues has shown that *C. panda* and *C. weitzmani* are sister species and quite closely-related, so it's understandable that they are genetically compatible and that their hybrid offspring are fertile. Other corys are known to hybridise in aquaria (e.g., *C. adolfoi*, *C. davidsandsi*, *C. sterbai*, *C. axelrodi*, etc.) but these have not been confirmed or shown to produce fertile offspring.

How likely is it to happen in nature? Interestingly, in his 1970 revision of corys from Suriname, Han Nijssen drew attention to a specimen that he believed was a natural hybrid (Fig. 7). Most importantly, Nijssen stated that the hybrid was found in a sample of 240 specimens of *C. copenamensis* and 28 specimens of *C. surinamensis* from a single location. This gives us an estimate of the frequency of hybrid corys in nature where two compatible species co-occur; approximately 1 in 250. This strikes me as actually quite high and one that might have some evolutionary significance, but it is only a single estimate so could be wildly inaccurate.

There are other instances of hybrid corys being found among imports of two or more sympatric species, but these don't come with an estimate of their frequency. Many probably go unnoticed as the differences could be slight – as in the example I've described here. The most recent detection (to my knowledge) was of a

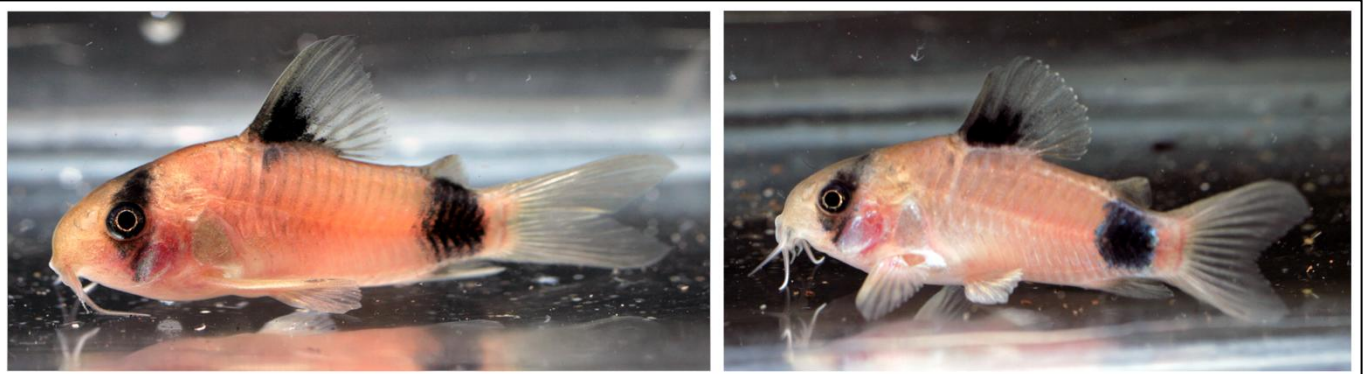


Fig. 6. Two of several F1 hybrids spawned by hybrid parents of *C.panda* X *weitzmani*. Photos: M. Hardman

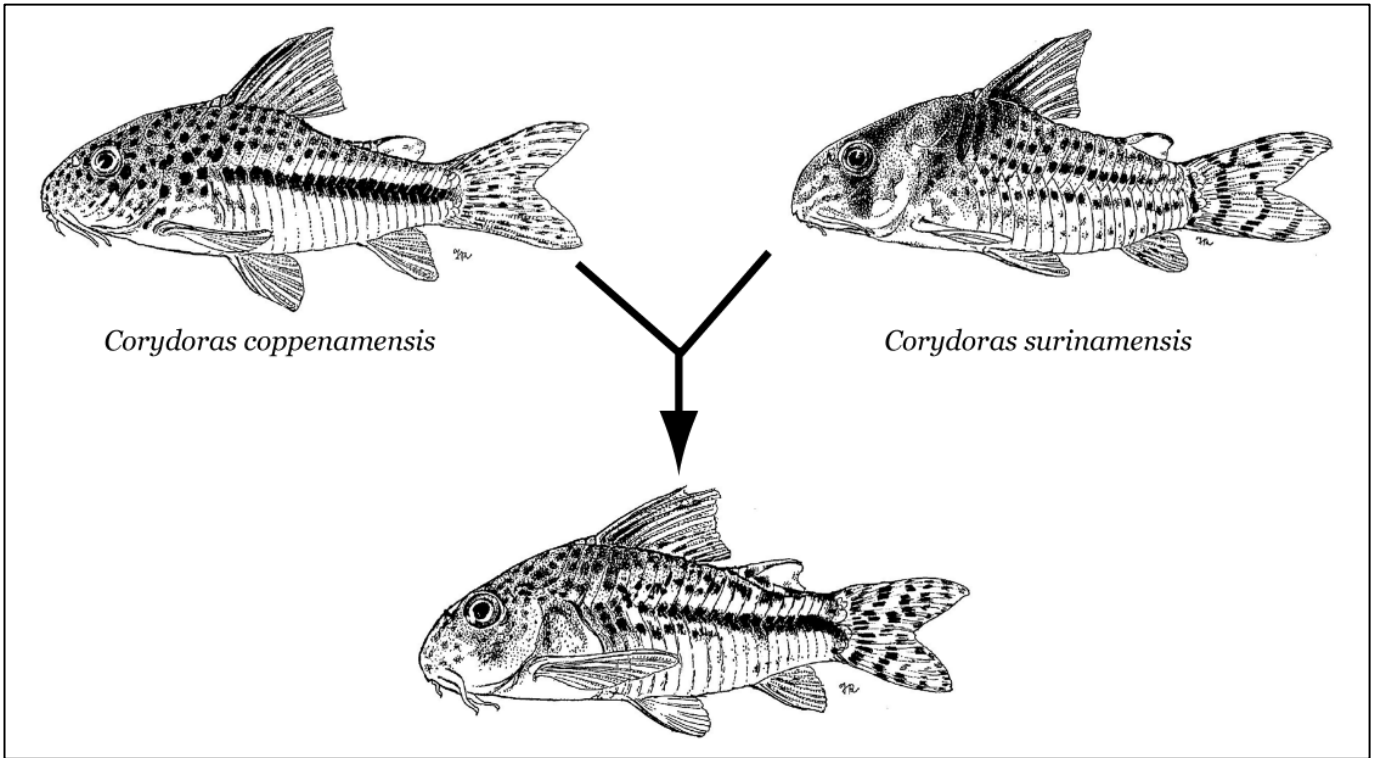


Fig. 7. Illustration of a natural hybrid (below) resulting from the presumed spawning of *C. coppenamensis* and *C. surinamensis*. Reproduced from Nijssen (1970).

single hybrid in a shipment received by Pier Aquatics (Wigan, UK) of *C. sp.* CW030 and *C. aff. leucomelas* from the Brazil-Guyana border region (Fig. 8). The fish along with its two likely parental species was featured in the June issue of the 2016 CSG journal. And it's worth keeping in mind that especially rare with variable patterns that lie somewhere between two well-known species (e.g., *C. evelynae*) may represent natural hybrids that are cherry-picked by exporters knowing that they command a premium price if sold separately.

There are genetic procedures to check the hybrid status of a given individual and reveal cases where this has happened in the past. I hope to look into this in more detail with the data generated by Markos and Martin, but so many fish... so little time. In the meantime, keep your eyes peeled for hybrids in newly-imported shipments of wild corys and please let me know if you spot any!

**References**

Nijssen, H. 1970. Revision of the Surinam Catfishes of the genus *Corydoras* Lacépède, 1803 (Pisces, Siluriformes, Callichthyidae). *Beaufortia* 18: 230, 1-75.

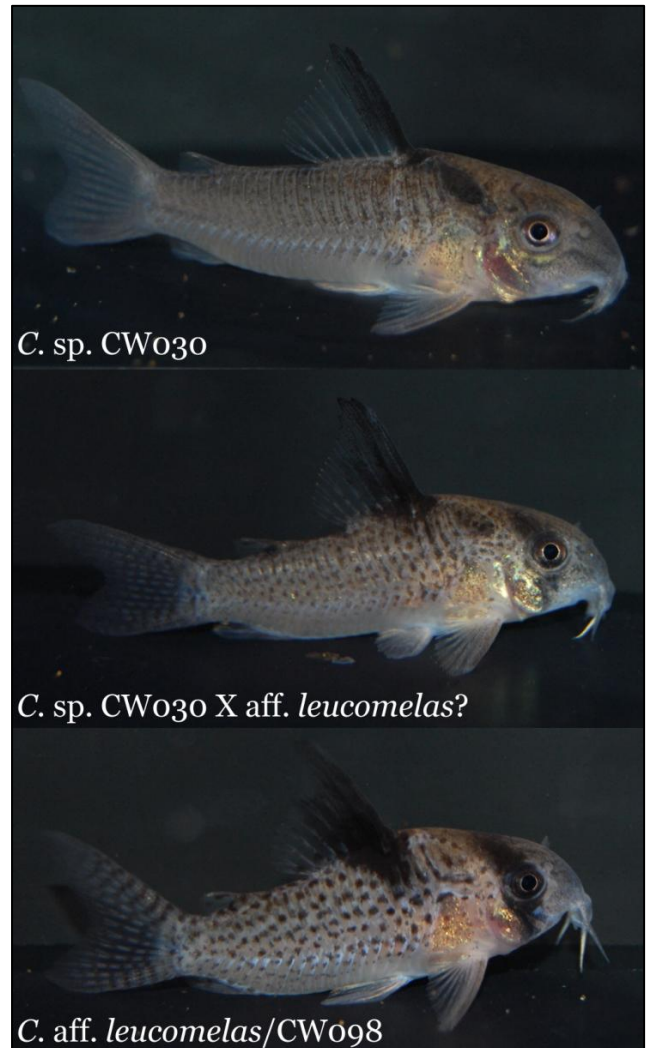


Fig. 8. Putative natural hybrid (centre), with parental species above and below. Photos: N. Woodward, Pier Aquatics.



## Convention 2017 Speakers



**Melanie Stiassny, Ph.D.**

Melanie's research focuses on the systematics and evolutionary morphology of tropical freshwater fish faunas, and applies classical descriptive anatomy, geometric morphometrics, CT and MRI scanning for hard and soft tissue visualization, and 3D reconstruction for spatial and volumetric analyses. Her taxonomic expertise spans the teleostean tree of life, and includes phylogenetic studies of diverse teleostean lineages. Ongoing projects are centered in central Africa and seek to document how diversity is partitioned, and to elucidate mechanisms underlying species diversification applying population genetic and phylogeographic components that integrate novel hydrographic and bathymetric data at varying geographic scales. Current work also seeks to aid NGO's and governmental agencies develop regional conservation strategies. Key to this is the establishment of in-country expertise and she maintains an active collaboration with the universities of Kinshasa (Democratic Republic of Congo) and Marien Ngouabi (Republic of Congo) to promote training of Congolese nationals.

She serves as advisor to numerous international scientific and conservation organizations such as the IUCN, USAID, and the International Foundation for Science. She is a member of the National Council of the World Wildlife Fund and the Advisory Board of National Geographic Society's Conservation Trust.



**Hans-Georg Evers**

Hans lives in Hamburg, Germany and has been an aquarist as long as he can remember. Starting with a community tank, his interest soon focused on African cichlids of Lake Tanganyika and later West Africa. In the early 1980s, his interest shifted into catfish and there it has remained until today, specializing on the Corydoradinae and Loricariidae, although he also knows his tetras, rainbowfish and many other freshwater fishes. Hans has so far bred and raised more than 400 different species of freshwater fishes in aquaria. Almost a quarter of those are corys (121 spp.) and over 40 species of Loricariidae.

Hans is a busy traveler and combines fish talks with exploring new habitats all over the world. In addition to his native German, Hans speaks English, Portuguese and some Spanish and has visited many tropical countries in search of new and interesting fishes for the aquarium hobby. Hans has collected in all the main affluents of the Amazon as well as other river systems in Peru, Venezuela and regularly visits Indonesia, India and Australasia. Hans has published 12 books and more than 800 articles in hobbyist magazines worldwide. Since 2005, Hans has served as Chief Editor of AMAZONAS. In this magazine, new and spectacular tropical fishes are showcased, many of them for the first time.

Hans will be talking about his experiences collecting loricariids and what he has learned about their habitat preferences.





**Peter Petersen**

Peter is from Copenhagen and got his start in fishkeeping thanks to the gift of 40L aquarium from his aunts and uncle. Before long, one aquarium in his bedroom became 50 in the basement, and Peter began breeding all kinds of fish, even some catfish species such as *Corydoras*.

Fish remained an important part of his life growing up, and he became increasingly interested in their habitats. After training to become a professional zookeeper/aquarist at Roskilde Technical College, Peter has made expeditions throughout the tropics and elsewhere around the globe in search of firsthand knowledge of fish and their habitats.

In his earlier years, Peter worked in a fish import-retail business in where he, like many of us, developed a deep fascination with catfishes. The aquarist community soon learned of Peter's expertise and he has become a regular speaker at aquarium-fish events and has recently started a company (Amazonas Aqua Consult) and built a website to serve the mountains of information he has gathered ([www.amazonas.dk](http://www.amazonas.dk)).

In 2014, Peter began working at The National Aquarium of Denmark ("Den Blå Planet") as the aquarist in charge of tropical freshwater. He also teaches at Roskilde Technical College and is consulted by Danish aquatic retailers and aquarists.

Peter will be speaking to us about his work with catfish at the National Aquarium of Denmark, and how to find clues in natural habitats when trying to unlock the secrets of many species.



**Luiz Tencatt**

Luiz was born in Campo Grande, Mato Grosso do Sul, Brazil, and his interest in catfishes has led to a bachelor's degree in Biological Sciences from the Universidade Federal de Mato Grosso do Sul (2007–2010), and a master's degree from the Universidade Estadual de Maringá (2011–2013) reviewing *Corydoras paleatus* under the supervision of Carla Pavanelli and Marcelo Britto. Luiz has continued his studies and is now studying for his PhD and completing a taxonomic review of *Aspidoras Ihering, 1907*. The main objective of his research is to provide clear ways to recognize species of Corydoradinae, some of which he has published in the CSG journal. Luiz has strong ties with the aquarist community, is an aquarist himself, and enjoys exchanging information with aquarists through social media. Luiz will be presenting his research into the systematics of Corydoradinae, and telling us all about his latest discoveries in the genus *Corydoras*.



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For more information and to book your tickets, contact [Mark Walters](mailto:Mark Walters) or check out [catfishstudygroup.org](http://catfishstudygroup.org) and [Facebook](https://www.facebook.com/catfishstudygroup)



## Report on the 2016 CSG Open Show

By Mark Walterloo



On 18<sup>th</sup> September, the CSG held its annual open show and auction. With 38 classes to enter and prizes for all 1<sup>st</sup> 2<sup>nd</sup> and 3<sup>rd</sup> placed entries, there was an exceptional turnout of catfish exhibited in the best possible conditions by a hardy bunch of exhibitors from across the UK.

The coveted Best in Show award was won by Jamie Horne of Castleford Aquarist Society (below centre), with a large *Xyliphius melanopterus*, a banjo catfish seldom seen in captivity and a cracking specimen. The highest-scoring fish was for a *Corydoras napoensis* shown by Mike Kirkham (Catfish Study Group, below left) at 93 points out of 100. This year's

Master Breeder award was won by Danny Blundell (CSG, below right) with juveniles of three different pleco species. Other awards are listed below.

While the show fish were being judged, I auctioned off a few hundred bags of fish and other aquatic goods provided by some of the best catfish breeders in the UK. Attendees travelled from as far as Kent and Bristol to pick up bargain *Corydoras*, *Hypancistrus* and other rarely-seen catfishes. Special thanks to our Show Secretary Brian Walsh and all who exhibited, judged and helped run another successful CSG event!



## 2016 CSG Open Show results

### Class 1: ASPIDORAS (3)

**Sponsored by M. Kirkham - MRK Plumbing & Heating**

- 1<sup>st</sup> J. Hetherington, CSG. *Aspidoras taurus* 79 pts  
2<sup>nd</sup> J. Hetherington, CSG. *A. fuscoguttatus* 77 pts  
3<sup>rd</sup> W. Drake, Preston AS. *A. Taurus* 76 pts

### Class 2: BROCHIS (1)

**Sponsored by M. Kirkham - MRK Plumbing & Heating**

- 1<sup>st</sup> M. Kirkham, CSG. *B. multiradiatus* 80 pts

### Class 3: CORYDORAS "A" up to 55mm SL (6)

**Sponsored by I. Fuller –  
[Corydorasworld.com](http://Corydorasworld.com)**

- 1<sup>st</sup> M. Kirkham, CSG. *C. napoensis* 87 pts  
2<sup>nd</sup> D. & L. Speed, CSG. *C. napoensis* 85 pts  
3<sup>rd</sup> B. O'Neill, CSG. *C. habrosus* 82 pts

### Class 4: CORYDORAS "B" over 55mm SL (10)

**Sponsored by I. Fuller –  
[Corydorasworld.com](http://Corydorasworld.com)**

- 1<sup>st</sup> J. Horne, CAS. *C. leopardus* 85 pts  
2<sup>nd</sup> R. Blackburn, CAS. *C. pulcher* 82 pts  
3<sup>rd</sup> J. Horne, CAS. *C. ambiacus* 81.5 pts

### Class 5: CORYDORAS C & CW/Unid. (9)

**Sponsored by I. Fuller –  
[Corydorasworld.com](http://Corydorasworld.com)**

- 1<sup>st</sup> J. Benbow, Preston AS. C118 86 pts  
2<sup>nd</sup> J. Horne, CAS. CW114 83.5 pts  
3<sup>rd</sup> B. O'Neill, CSG. CW52 83 pts

### Class 6: SCLEROMYSTAX (3)

**Sponsored by M. Walters**

- 1<sup>st</sup> M. Walters, CSG. *S. prionotus* 79 pts  
2<sup>nd</sup> M. Kirkham, CSG. *S. kronei* 75.5 pts  
3<sup>rd</sup> M. Walters, CSG. *S. barbatus* 74 pts

### Class 7: AOV CALLICHTHYIDAE (2)

- 1<sup>st</sup> M. Kirkham, CSG. *L. pectoral* 87 pts  
2<sup>nd</sup> J. Horne, CAS. *H. punctatum* 83 pts

### Class 8: ASPREDINIDAE (5)

**Sponsored by B. Walsh – [woodart.me.uk](http://woodart.me.uk)**

- 1<sup>st</sup> J. Horne, CAS. *Xylophius melanopterus* 87 pts  
2<sup>nd</sup> J. Horne, CAS. *Amaralia hypsiura* 86 pts  
3<sup>rd</sup> J. Horne, CAS. *X. lepturus* 85 pts

### Class 9: AUCHENIPTERIDAE (7)

**Sponsored by B. Walsh – [woodart.me.uk](http://woodart.me.uk)**

- 1<sup>st</sup> M. Kirkham, CSG. *Liosomadoras oncinus* 86 pts  
2<sup>nd</sup> I. Walbridge, Bradford. *Centromochlus altae* 83 pts  
3<sup>rd</sup> R. Blackburn, CAS. *L. morrowi* 82.5 pts

### Class 10: BAGRIDAE (5)

**Sponsored by B. Walsh – [woodart.me.uk](http://woodart.me.uk)**

- 1<sup>st</sup> R. Blackburn, CAS. *Leiocassis hosii* 81 pts  
2<sup>nd</sup> J. Horne, CAS. *Mystus tengara* 79 pts  
3<sup>rd</sup> J. Horne, CAS. *Pseudomystus funebris* 75 pts

### Class 11: DORADIDAE (3)

**Sponsor: B. Walsh – [woodart.me.uk](http://woodart.me.uk)**

- 1<sup>st</sup> M. Kirkham, CSG. *Anadoras grypus* 89 pts  
2<sup>nd</sup> G. Savage, CAS. *Platydoras armatulus* 88 pts  
3<sup>rd</sup> G. Savage, CAS. *Opsodoras stubelli* 84 pts

### Class 12: LORICARIIDAE up to 130mm (4)

**Sponsored by [zebraleco.com](http://zebraleco.com)**

- 1<sup>st</sup> M. Kirkham, CSG. *Otocinclus arnoldi* 83 pts  
2<sup>nd</sup> J. Horne, CAS. *Hypoptopoma thoracatum* 82 pts  
3<sup>rd</sup> M. Kirkham, CSG. *Hisonotus aky* 80 pts

### Class 13: LORICARIIDAE over 130mm (2)

**Sponsored by [aquaticrepublic.com](http://aquaticrepublic.com)**

- 1<sup>st</sup> M. Walters, CSG. *Peckoltia braueri* 89 pts  
2<sup>nd</sup> D. & L. Speed, CSG. *Pseudacanthicus spinosus* 88 pts

### Class 14: L&LDA-numbers up to 130mm (4)

**Sponsored by [Planetcatfish.com](http://Planetcatfish.com)**

- 1<sup>st</sup> D. & L. Speed, CSG. *Panaqolus L002* 83 pts  
2<sup>nd</sup> I. Walbridge, Bradford. *Ancistrus L213* 82 pts  
3<sup>rd</sup> D. & L. Speed, CSG. *Spectracanthicus L038* 79 pts

### Class 15: L&LDA-numbers over 130mm (1)

**Sponsored by [Planetcatfish.com](http://Planetcatfish.com)**

- 1<sup>st</sup> M. Walters, CSG. *Peckoltia L076/099* 84 pts

### Class 16: MOCHOKIDAE up to 130mm (5)

**Sponsored by A. James – [scotcat.com](http://scotcat.com)**

- 1<sup>st</sup> D. & L. Speed, CSG. *Mochokiella paynei* 85 pts  
2<sup>nd</sup> B. O'Neill, CSG. *Microsynodontis polli* 84 pts  
3<sup>rd</sup> B. O'Neill, CSG. *Microsynodontis sp.* 83 pts

### Class 17: MOCHOKIDAE over 130mm(1)

**Sponsored by A. James – [scotcat.com](http://scotcat.com)**

- 1<sup>st</sup> S. Grant, CAS. *Synodontis nigrita* "gold" 77 pts

### Class 18: PIMELODIDAE up to 100mm (3)

**Sponsored by [Amazon Research Center for Ornamental Fishes](http://Amazon Research Center for Ornamental Fishes)**

- 1<sup>st</sup> G. Savage, CAS. *Microglanis cottoides* 84 pts  
2<sup>nd</sup> J. Horne, CAS. *Pimelodella australis* 82 pts  
3<sup>rd</sup> R. Blackburn, CAS. *Microglanis cottoides* 81 pts

### Class 19: PIMELODIDAE over 100mm (1)

**Sponsored by [Amazon Research Center for Ornamental Fishes](http://Amazon Research Center for Ornamental Fishes)**

- 1 M. Kirkham, CSG. *Imparfinis longicauda*. 80 pts



Class 20: COLDWATER CATFISH (2)

1<sup>st</sup> J. Horne, CAS. *Tachysurus trilineatus* 84 pts  
2<sup>nd</sup> G. Savage, CAS. *Pseudobagrus trilineatus* 83 pts

Class 21: AOV CATFISH – SOUTH AMERICAN (1)

1<sup>st</sup> R. Blackburn, CAS. *Ituglanis metae* 75 pts

Class 22: AOV CATFISH – AFRICAN (3)

1<sup>st</sup> J. Horne, CAS. *Channalabes apus* 82 pts  
2<sup>nd</sup> M. Kirkham, CSG. *Chrysichthys ornatus* 80 pts  
3<sup>rd</sup> J. Horne, CAS. *Pareutropius buffei* 78 pts

Class 23: AOV CATFISH – ASIAN (3)

1<sup>st</sup> D. & L. Speed, CSG. *Akysis longifilis* 83 pts  
2<sup>nd</sup> G. Savage, CAS. *Pseudolaguvia muricata* 82 pts  
3<sup>rd</sup> G. Savage, CAS. *Hara jerdoni* 79 pts

Class 24: PAIRS – CORYDORADINAE (6)

**Sponsor: I. Fuller – [Corydorasworld.com](http://Corydorasworld.com)**

1<sup>st</sup> M. Kirkham, CSG. *C. napoensis* 93 pts  
2<sup>nd</sup> J. Hetherington, CSG. *C. diphyes* 87 pts  
3<sup>rd</sup> B. O'Neill, CSG. *C. CW052* 86 pts

Class 25: PAIRS – LORICARIIDAE inc L&LDA-numbers (1)

**Sponsor: [B.I.D.K.A.](http://B.I.D.K.A.)**

1<sup>st</sup> M. Walters, CSG. *Peckoltia L038* 76 pts

Class 26: PAIRS – AOV SOUTH AMERICAN (3)

1<sup>st</sup> R. Blackburn, CAS. *Bunocephalus larai* 82 pts  
2<sup>nd</sup> M. Kirkham, CSG. *Trachelyopterus albierux* 78 pts  
3<sup>rd</sup> J. Horne, CSG. *B. larai* 77 pts

Class 27: PAIRS – AOV AFRICAN (2)

1<sup>st</sup> D. Blundell, CSG. *Microsynodontis polli* 79 pts  
2<sup>nd</sup> J. Horne, CAS. *Pareutropius buffei* 74 pts

Class 28: PAIRS – AOV ASIAN (1)

1<sup>st</sup> G. Savage, CAS. *Erithistes pusillus* 83 pts

Class 29: BREEDERS–CORYDORADINAE (2)

**Sponsor: I. Fuller – [Corydorasworld.com](http://Corydorasworld.com)**

1<sup>st</sup> W. Drake, Preston AS. *Aspidoras CW052* 79 pts  
2<sup>nd</sup> W. Drake, Preston AS. *C. gossei* 73 pts

Class 30: BREEDERS–LORICARIIDAE Inc L&LDA (4)

**Sponsor: [B.I.D.K.A.](http://B.I.D.K.A.)**

1<sup>st</sup> D. Blundell, CSG. L333 83 pts  
2<sup>nd</sup> D. Blundell, CSG. L201 81.5 pts  
3<sup>rd</sup> D. Blundell, CSG. L015 81 pts

Class 31: BREEDERS – AOV S. AMERICAN (3)

**Sponsored by D. Blundell**

1<sup>st</sup> J. Horne, CAS. *Bunocephalus larai* 85 pts  
2<sup>nd</sup> I. Walbridge, Bradford. *Centromochlus perugiae* 84 pts  
3<sup>rd</sup> I. Walbridge, Bradford. *Tatia intermedia* 83 pts

Class 34: FAMILY CLASS – Pair-Breeders Team (1)

1<sup>st</sup> J. Horne, CAS. *Bunocephalus larai* 162 pts

Class 35: BREEDERS – MASTER CLASS (1)

*Ted Derrick Memorial Trophy*

1<sup>st</sup> D. Blundell, CSG. 244 pts

**TROPHY WINNERS 2015**

*Best in Show – Sam Trophy*

J. Horne, CAS. *Xylophius melanopterus* Class 8  
M. Kirkham CSG. *Liosomadoras oncinus* Class 9  
J. Horne, CAS. *Tachysurus trilineatus* Class 20

*Best Corydoradinae [Classes 1-6] - Yvonne Cank Memorial Trophy*

M. Kirkham, CSG. *Corydoras napoensis* Class 3

*Best from Classes 7-11 – Masterstaff Cup*

J. Horne, CAS. *Xylophius melanopterus* Class 8

*Best Loricariidae [12-15] – Masterstaff Trophy*

M. Walters, CSG. *Peckoltia braueri* Class 13

*Best Synodontis [16-17] – L.M.B. Aquatics Shield*

D. & L. Speed, CSG. *Mochokiella paynei* Class 16

*Best Pimelodidae [18-19] – S & P S Cup*

G. Savage, CAS. *Microglanis cottoides* Class 18

*Best AOV Catfish [20-23] – A.O.V. Catfish Cup*

D. & L. Speed, CSG. *Akysis longifilis* Class 23

*Best Pair [24-28] – Clint Cup*

M. Kirkham, CSG *Corydoras napoensis* Class 27

*Best Breeders Team [29-33] – Kings Carpets Trophy*

J. Horne, CAS. L260 Class 31



Next CSG meeting: AGM - Sunday 15 January 2017

Derwent Hall, Darwen, Lancashire. BB3 0DQ

Contact [Mark Walters](mailto:Mark Walters) or check

[catfishstudygroup.org](http://catfishstudygroup.org) and [Facebook](https://www.facebook.com/csg) for details

## Update on the trade of threatened catfishes

By Mark Walters

Recent reports of banned catfish species have focussed on species which can no longer be exported from Brazil due to their threatened status, including the latest restrictions on *Hypancistrus zebra* which was recently given CITES (Convention for the International Trade in Endangered Species) protection requiring official permits to trade wild or captive-bred fish across international borders.

The 'CITES III'-added protection of the zebra pleco (*Hypancistrus zebra*) is welcome, considering the flagrant disregard for the export restrictions imposed over a decade ago by unscrupulous exporters and neighbouring countries. From January 2017, any exporters will need to provide documentation to prove the legal movement of the species, and any traders importing the species will need to hold the necessary legal documentation. Trade within a country is not subject to the same requirements, although if you wanted to sell offspring abroad you would need to secure the appropriate licence.

In England (not applicable to the rest of the UK), legislation has been passed recently consolidating the rules for fish species that can be legally maintained in captivity. The legislation is less about protecting vulnerable species, and more about protecting native fish stocks from invasive species. Hence the list of banned species includes those that could tolerate the climatic conditions of English waters, and establish there if released and thereby pose a threat to the native wildlife.

In a rather complicated spreadsheet, found with some difficulty amongst the 'Department of Food and Rural Affairs' (Defra) website, there exist lists of all known freshwater fish genera with confirmation that they can either be maintained in indoor aquaria under the general licence (no need to apply) or that certain species within a given genus cannot be kept. Some species have been banned for many years, including the European Wels (*Silurus glanis*) which is already present in some inland fisheries in the UK. It is a popular sport fish and without

further control could pose an obvious threat to native fauna.


To add to the list, all North American catfish species including bullheads and madtoms of the family Ictaluridae are banned. Genera included are *Ictalurus*, *Noturus*, *Ameiurus*, *Prietella*, *Pyloodictis*, *Satan* and *Trogloglanis*.

Cooler-water Asian catfish are also included with the Chinese 'tawny dragon' catfish of the genus *Tachysurus* being the most obvious, the list also includes synonyms of the genus as *Leiocassis* and *Pseudobagrus*, to ensure the species is not imported under other names.

Two other genera are identified with 34 sub-tropical species of the walking catfish (*Clarias*) and eight species of *Neosilurus* (only *N. ater* allowed) being included.

On the face of it, the restrictions shouldn't affect the catfish hobbyist unduly, with very few of the listed species featuring in aquaria, although I have seen a few *Tachysurus* available in aquatic auctions. Catfish keepers have escaped lightly, whereas there are numerous cyprinids, especially barbs and loaches, on the list of restricted species which could have people checking their tanks!



A close-up photograph of two snails on a green leaf. One snail is positioned higher and further to the left, while the other is lower and further to the right. The background is a soft-focus blue and green. Two speech bubbles are overlaid on the image. The top speech bubble is connected to the upper snail, and the bottom speech bubble is connected to the lower snail.

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