CAT CHAT

The Journal of the Catfish Study Group (UK)

Tracking Wakes
The nocturnal predatory strategy of piscivorous catfish

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From the Chair

The last three months have been somewhat hectic and has involved quite a bit of travelling on my part. The only meeting I managed to take part in was the Open Show & Auction, although because I was officiating in a judging capacity I didn't have any involvement in the auction itself, save for entering a few bags of my surplus fish. The show itself seems to be getting better and better every year, not only are the numbers of entries on the increase, but the overall quality of the fish is improving, making judging ever more difficult. It just goes to show how dedicated Catfish keepers are when it comes to looking after their charges.

As I mentioned in the last issue my travelling has taken me across the pond yet again, this time I missed the October meeting to travel to the state of Michigan where I gave a couple of talks to the South Michigan Aquarium Society in Kalamazoo. I just love these trips where I have the opportunity to meet like minded people, meet old friends and see how fish keepers in other parts of the world keep and look after their fishes. Quite often there are new ideas and techniques being used that I end up trying, many of them are quite unique in the way that they have evolved, many of them deserve description for their innovation, perhaps there's space within these pages for such designs and ideas. On this particular trip I saw a warm air heating system for a fish room, where a thermostatically controlled fan blew warn air ducted from a central heating system. Needless to say this was the innovation of a gas-heating engineer.

Then while many of you were at the autumn auction in November snapping up bargains, I was away talking catfish in Norway and seeing how aquarists there do their thing. Both in the USA, Norway and I dare say many other parts of the world aquarists definitely have an advantage over us Brits in that most of your homes have basements, just the mention of a basement sends me green with envy. On my travels I have seen many incredible basement fish rooms, but the ultimate must surely be this one I visited while on my recent in Norway and included this indoor pond and a well maintained 54 tank rack system.

Moving on to a couple of important events in our calendar, the first of which is the AGM on January 15th and contrary to common belief, if you turn up you won't necessarily get lumbered with a job to do, unless of course you feel that you have something to offer and want to become an active member and help maintain the longest serving Catfish group on the planet. And most importantly it is also the time when you have your say, tell us what you would like to see happening, or the things that you don't like.

Second on my list is the CSG Convention; this is our number one event of the year and takes place in February. As you will all be aware the 2006 event is undergoing a major transformation in that it has changed from a one-day event to a full weekend, starting on Friday evening of the 17th February through Sunday the 19th. I am sure the event will be a huge success; everything is now in place, speakers, convention room, program, even the menus for the convention diners have been set. To ensure you are not disappointed it would be advisable to book your tickets early to ensure your place, advanced bookings mean that half the seats have been already been filled already. With members already committed from the USA, Germany and Norway we are heading for a truly international event. I am really looking forward to meeting many of you in person.

In the mean time happy fishkeeping.

Ian Fuller

Tracking wakes: The nocturnal predatory strategy of piscivorous catfish

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Swimming fish leave wakes containing hydrodynamic and chemical traces. These traces mark their swim paths and could guide predators. We now show that nocturnal European catfish (*Silurus glanis*) locate a piscine prey (guppy, *Poecilia reticulata*) by accurately tracking its three-dimensional swim path before an attack in the absence of visible light. Wakes that were up to 10 s old were followed over distances up to 55 prey-body lengths in our setup. These results demonstrate that prey wakes remain sufficiently identifiable to guide predators, and to extend considerably the area in which prey is detectable. Moreover, wakes elicit rear attacks, which may be more difficult to detect by prey. Wake tracking may be a common strategy among aquatic predators.

When an animal swims, chemical and hydrodynamic stimuli persist in its wake for some time after it has left the vicinity (1, 2). Previous studies on predatory fish using olfactory or mechanosensory cues to localize moving prey are few in number and indirect (3, 4). Most studies on predator–prey interactions in fish have used predominantly visual predators under well lit conditions (5). The niches of many piscivorous fish, however, require them to hunt at night or at depths where the limited penetration of solar, sidereal, or lunar illumination limits the utility of visual senses (6). We hypothesized that in these circumstances, wakes left by prey fish are used by predatory fish to detect and track their prey in three dimensions, analogous to the way in which dogs or snakes follow the two-dimensional tracks left by their terrestrial prey (7, 8). To test this hypothesis, we analyzed the predatory strategy of a nocturnal catfish (*Silurus glanis*) as it found and attacked swimming prey fish (guppies, *Poecilia reticulata*). The use of a prey's wake can be distinguished from visual, acoustical, and electrical tracking of prey by path analysis. In all but wake tracking, the predator perceives the instantaneous location of its prey and will approach it directly or in an arc, intercepting the prey's path (9, 10). An indication, therefore, of wake tracking is the similarity of the paths of prey and predator through space with a significant time lag.

Materials and Methods

We used a video-based infrared-illuminated system, maintaining both prey and predator in visual blackout conditions and allowing us to make three-dimensional evaluations of their swim paths. This system consisted of a glass test aquarium (120 cm □ 60 cm, filled to a height of 40 cm) illuminated by infrared back lighting. The infrared used was in the 810–950-nm range (maximum at 870 nm), which is outside the range of absorption of the visual pigments of fish (11). Catfish conditioned to react to visual stimuli do not react under infrared illumination, confirming that they cannot see in infrared (K. Pohlmann, personal observation). Fish behavior was recorded on digital video by using two IR-sensitive cameras from different directions. The two recordings were synchronized accurately to the frame. Guppies (total lengths 2.0–5.1 cm) were chosen as prey for their slow and clumsy swimming behavior and for their low tendency to swim or rest close to walls. Guppies use undulatory and push-and-coast swimming. The wakes caused by both of these swimming modes are well described (2, 12, 13). Four different catfish were used as predators, total lengths 20–25 cm. They were accustomed to feeding on live piscine prey.

Each trial started after the catfish had been acclimated in the experimental tank for at least1hin darkness. The experimental room was entered through a double curtain to ensure total darkness and one individual guppy was added with a small amount of water (<50 ml) into the middle of the experimental tank. Five min after the prey had been consumed (viewed on monitors next door), the next prey was added. A trial ended when 10 prey fish had been consumed or was aborted when the added prey fish were not consumed within 20 min.

Attack Characterization. All sequences leading to attacks of the predator on a prey were analyzed carefully from the two video recordings. All captures and snapping movements of a catfish directed at a

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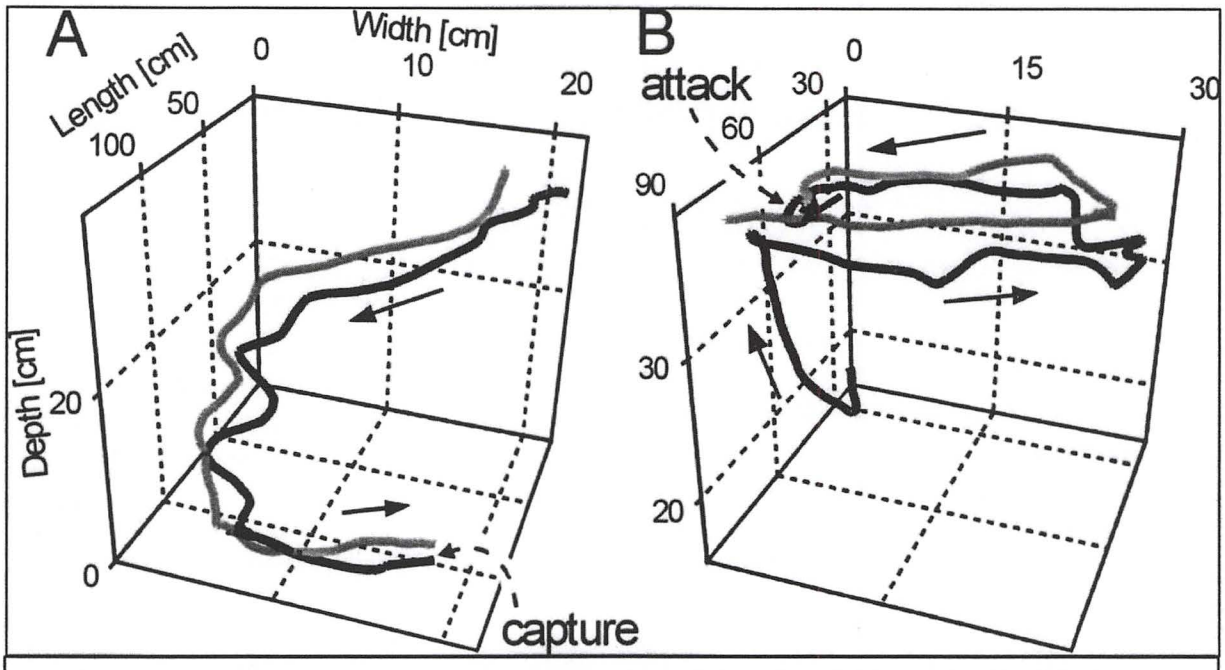

Fig. 1. Examples of smoothed three-dimensional swim paths of predator and prey prior to attacks classified as wake following. Black, predator; gray, prey. The numbers depict cm and correspond to calibrated positions in the test tank. Arrows indicate the swimming direction. The three planes drawn do not depict the walls of the tank: the bottom plane was at a depth = 0 cm, the surface plane was at a depth = 40 cm, and the walls were at length = 0 and 120 with widths = -5 and 55 cm. Note different *x*, *y*, and *z* scales.

guppy less than 1.5 cm away were considered attacks. The direction from which the guppy was attacked (top, below, sides, front, behind) was determined for each sequence. The direction of attacks did not change with the number of prior attacks (nominal logistic regression, $P = 0.45$). Nominal logistic regression is used to determine the effect of one or more predictors on a nominal (i.e., not quantitative) dependent variable. There were no significant effects of guppy gender or its total length, or of catfish identity on the direction of attacks (tested simultaneously by nominal logistic regression, $P > 0.38$). Therefore, all data were pooled for subsequent analyses.

We classified all attacks into three categories: (*i*) path-following (the predator swam along the same path as the prey, eventually attacking it); (*ii*) head-on encounters (the predator encountered the moving prey without prior path overlaps); and (*iii*) attacks on stationary guppies.

Quantitative Path Analyses. To determine whether catfish were actually following the wakes of their prey, we digitized (at 25 Hz; Adobe PREMIERE 5.1, Adobe Systems, Mountain View, CA) sequences with attacks occurring away from the walls to avoid path convergence resulting from both fish swimming along the wall. We chose 22 attacks classified as path-following; for the two other types, all attacks away from the walls were digitized. The digitized sequences ended with the attack or capture and started 2 s before the predator seemed to respond to the presence of the prey. To digitize swimming paths, we tracked the positions of the tips of the heads of both predator and prey by using motion analysis software (WINANALYZE 1.1, Weinberger, Karlsruhe, Germany).

The resulting three-dimensional swim paths of predator and prey were smoothed by a running average over 10 points to eliminate predator head movement and tracking inaccuracies. Then, these digitized swim paths were plotted (for examples see Figs. 1 and 2). To establish a quantitative comparison of swim paths independent of the swimming velocities of predator or prey, new points were set at regular intervals of 2 mm on each path. To determine whether the predator had been swimming along the path of the prey, the swimming direction in each point of the predator's path was subtracted from the direction of the closest point of the prey's path that occurred simultaneously or prior.

Indices of path similarity were computed from the distribution of these differences in swimming direction for each pair of swim paths. As indices, we used the medians of the distributions to express central tendency and quartile differences (75–25% quartile) to express the spread of the distributions. Separate indices were computed for the medians and quartile differences in the orthogonal *xy* and *xz* planes for each pair of swim paths. Fish swimming along the same path, regardless of how complex or convoluted, should have small differences (medians around 0 and small

quartile differences) in swimming directions, whereas for fish swimming in independent paths, absolute values of these parameters should be considerably larger.

Nearest neighborhood discriminant analysis ($k = 3$) was used to determine the reliability of our three predetermined attack categories. This analysis was calculated on the basis of medians and quartile differences of distances between nearest points and differences in swimming directions. The proportion of misclassification was estimated by using the cross-validation approach, which is suitable for low and unequal sample sizes (14, 15).

All calculations, and the discriminant and cross-validation analyses (PROC DISCRIM, METHOD = NPAR) were done by using SAS 8; nominal logistic regressions and X^2 tests for the goodness of fit were performed in JMP 3.15.

Results

Of the 94 observed attacks, 59 resulted in successful captures of guppies. Seventy-five (80%) of all attacks occurred on moving prey, which is significantly higher than expected from the proportion of time guppies spent swimming (43% of total time, averaged from 8 arbitrarily chosen sequences of 31-min total duration; X^2 test for goodness of fit; $P < 0.0001$).

Most attacks were initiated from behind the prey fish (46% compared with 21% from the front, 9% from the two sides, 6% from above, and 18% from below). This proportion is significantly higher than expected if predators had no preferred attack direction (16.7%, X^2 test for goodness of fit; $P < 0.0001$). Of all rear attacks, 95% were directed toward moving prey.

Of the observed 94 attacks, 57 were categorized as path-following, 23 were categorized as head-on encounters, and 14 were categorized as attacks on stationary guppies. The categorization was confirmed graphically by plotting all digitized swim paths in three dimensions. Fig. 1 *A* and *B* shows examples of smoothed swim paths of predator and prey before attacks categorized as path-following. Fig. 2 depicts the spatiotemporal relations between predator and prey in another example categorized as path-following. The positions are indicated at 5 points in time: start, end, and 1–3 (catfish, c; guppy, g; Fig. 2).

Indices of path similarity computed from the distribution of the differences in swimming direction supported our classification: The medians and spread of the differences in swimming direction of attacks classified as path-following were small and much lower than those of the head-on encounters and attacks on stationary guppies (Fig. 3). Thus, in sequences categorized as wake-following, predator and prey were predominantly swimming in the same direction when, with a delay, they occupied the same location.

Nearest neighborhood discriminant analysis and cross validation further confirmed our categorization on the basis of quantitative criteria. Of the 34 digitized swim paths (22 path-following, 7 head-on encounters, 5 attacks on stationary guppies), only the two shortest were misclassified: one path-following was classified as a head-on encounter, and one head-on encounter was classified as an attack on a stationary guppy.

These results confirm that in the majority of all attacks, catfish were swimming along the same path as their prey before the attack.

The digitized sequences showed that catfish followed the wake of their prey for up to 121 cm (~55 prey-body lengths) and for as long as 33 s with maximal distances of 40 cm between animals despite the confined space of our aquarium. The median length of tracked-guppy paths was 47 cm. The path of the prey was up to 10.3 s old when encountered and subsequently followed by the predator. Distances between the prey and predator ranged from 40 to 6 cm

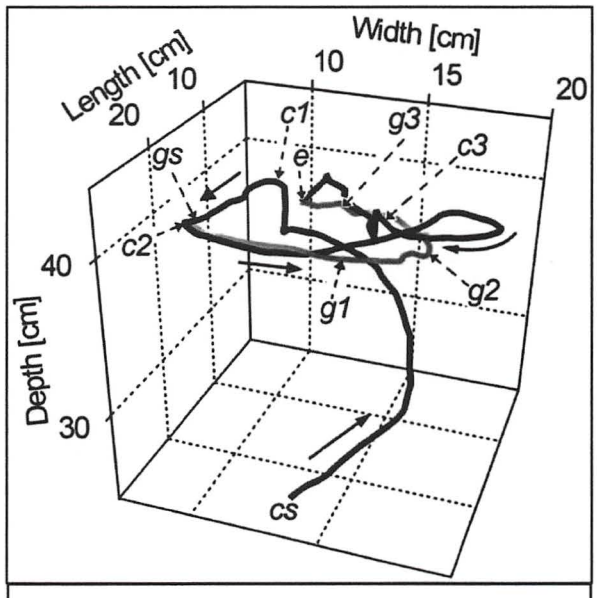

Fig. 2. Three-dimensional plot with temporal information of an attack categorized as wake following. Black, predator; gray, prey. The numbers depict cm and correspond to calibrated positions in the test tank. Solid arrows indicate the swimming direction. Three points in time (1 □ 11.3 s, 2 □ 8.6 s, and 3 □ 3.4 s before the attack) were chosen to indicate the locations of both fish: c1– c3 correspond to positions of the catfish and g1–g3 correspond to those of the guppy (e.g., c2 and g2 are synchronous positions). Also, the first (cs and gs) and last (e) points of both paths are at the same time. The path-following appears to begin when the prey is at g2 and when the predator at c2. Note different *x*, *y*, and *z* scales.

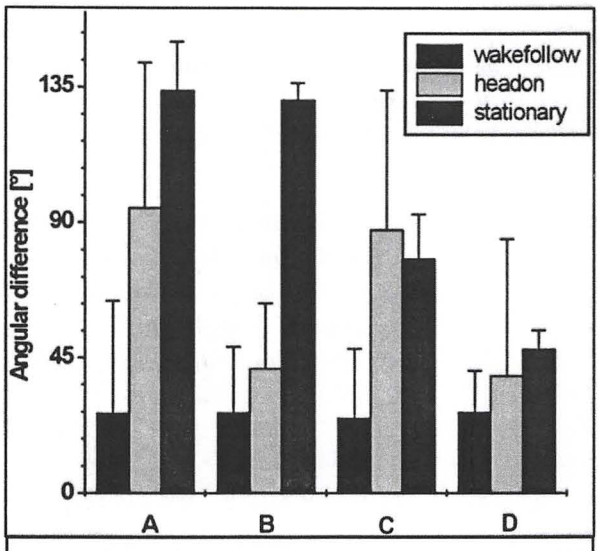

Fig. 3. Means and standard deviations of differences in swimming direction of predator and prey before attacks, comparing three attack categories: path-following, head-on encounters, and attacks on stationary guppies. A, medians in *xy* plane. B, quartile differences in *xy* plane. C, medians in *xz* plane. D, quartile differences in *xz* plane.

(median 12 cm) at the onset of tracking. The median distance during all digitized tracking sequences was 7.6 cm with distances gradually decreasing as the predator approached the prey (see Fig. 2).

Discussion

That the proportion of fish being attacked when moving is significantly larger than the proportion of time guppies spend moving indicates that catfish find moving guppies easier to detect and localize. This finding could imply wake detection but also the use of vision, hearing, and other senses that detect the instantaneous position of moving prey. However, we discovered here that moving fish were attacked predominantly from behind, that distances between fish at the onset and during path-following were several prey lengths, and that the majority of attacks occurred after path-following. These results make it most likely that the predator followed chemical/hydrodynamic cues in the wake of the prey. Chemical cues in the wake could be detected by olfaction or the extensive sense of taste; the latter is used by similar catfish in localizing nonmoving food (26). Hydrodynamic cues could be detected by the lateral line.

As alternatives to using hydrodynamic and/or chemical cues marking "past" prey positions in the wake, the predator could have used visual, acoustic, or electric cues radiating directly from the swimming prey, revealing its "instantaneous" position. Predators perceiving the instantaneous position of a prey would not follow more or less convoluted trails, i.e., past positions, over several prey-body lengths if they knew the actual prey location and could make a direct attack. Predatory strategies other than wake tracking would thus result in different swim paths or different spatiotemporal relations between predator and prey (as further explained below). Catfish are known to have a keen sense of hearing (16) and passive electroreception (17, 18). These senses as well as vision could be used to determine the instantaneous prey position.

Catfish do not seem to use their eyes for food detection (K. Pohlmann, personal observation, and J. Atema, personal communication) and, in addition, we did our experiments under infrared illumination eliminating visual cues in the spectrum generally perceivable by fish. Observations made when maintaining catfish in the lab indicate that catfish in general do not orient toward the visual image of food even in visible light. Acoustically guided attacks toward a target that is emitting sound continuously or in pulses (i.e., with every tail beat) are expected to come from any side but preferably not from behind the prey. Acoustic stimuli have been presumed to occur during swimming (19). In other experiments, we introduced a highly sensitive hydrophone (Type 8101; Brüel & Kjaer, Norcross, GA) into the tank. However, we never succeeded in recording any sounds from small fish like those used in the present experiment. In addition, in our experimental aquarium the background noise originating from pumps and cooling systems was so high (90 dB relative to 1 μPa, 0–200 Hz) that they would have masked subtle acoustic stimuli. Therefore, we conclude that neither visual nor acoustic stimuli were used to guide the wake following of the catfish.

Fish are surrounded by a dipole-like electric field that is detectable by catfish at about one prey-body length (20). When swimming, they also generate local hydrodynamic cues distinct from the wake [i.e., dipole-like flow fields (20)]. Neither of these fields is strongest behind the prey.

Swim paths of prey and predator would be similar also, at least over short distances, if the predator continuously sensed the instantaneous location of the moving prey and followed behind cautiously and closely, or if the prey sensed the nearby predator and swam away with the predator again following immediately. The prey, on sensing the predator, would be expected to react with escape movements. Rapid escape movements of the prey before an actual attack never occurred.

At greater distances (i.e., a few prey lengths) between predator and prey the predator should cut corners,

resulting in more rapid turns; instead, we observed gradual curves along the trail of the prey.

Finally, the distance between predator and prey along their paths gives important clues to the sensory information most likely used by the predator. As depicted in Fig. 2, at time 1 (c1, g1) the distance between predator (c1) and prey (g1) is smaller (distance ▯ 6 cm) than at time 2 (c2, g2, distance ▯ 10 cm). If the catfish used any form of instantaneous position detection (vision, audition, or the local electric or hydrodynamic stimulus fields) and not the wake, the predator should turn toward the prey at time 1 and not continue straight until hitting the previous path of the prey.

Therefore, the high proportion of observed rear attacks and the similarities in swim paths when fish were still several prey lengths apart cannot be explained by random encounters or by visual, electrosensory, or acoustic orientation. Wake tracking is the most parsimonious explanation for the observed predatory behavior.

Tank constraints may have limited wake detection. Flow visualization using small particles revealed that the disturbances created by the swimming catfish overpowered the smaller wakes of the prey, thereby limiting the possible tracking distance. The small test aquarium increased the probability of random encounters and caused wake reflections off the walls. Despite these constraints, wake following was the most frequent occurrence preceding an attack.

Hanke *et al.* (2) showed that in still water, a wake can be measured by particle image velocimetry over a 3-min period, and concluded that fish should be able to derive directional information from a 60-s-old wake. We expect that the distance and duration over which a wake can be detected under quiet natural conditions with modest background flow are higher than the 10 s found in our experiment, with fewer reflections and predator-caused perturbations than in our tank.

In the wake of a swimming fish, there is hydrodynamic and chemical information (21). The hydrodynamic stimuli caused by fish swimming in different modes have been studied in detail (12, 13, 22, 23). The hydrodynamic structure of a wake may hold information on direction, swimming mode, and size of the fish (2, 22). Because there are characteristic changes during the aging of hydrodynamic structures (2), it should be possible for a fish to estimate how long ago another fish had been there. The lateral line is sensitive enough to detect these stimuli and filters the relevant details (24, 25).

Chemical signals contained in the wake provide information about identity, and possibly distance and direction, of the prey. Size can be assessed from the expansion. Distance and direction are coded in steepness of the chemical gradients in dispersing odor patches (21). In catfish, chemical (taste) receptors are present in high densities on the whole body surface (26). For catfish, gustation is the major sense involved in locating and ingesting nonmoving food (26), and they exhibit true gradient searches to locate non-moving food items in stagnant water (27). Direction and age of the odor trail can be assessed by instantaneous chemical comparison using bilateral receptors (e.g., on the barbels) or temporal (sequential) comparison with only one sensory organ (21). Our catfish showed an enhanced interest in places where the prey had spent extended time during previous intervals. It is possible that in these regions, chemical stimuli had accumulated. It is not known whether catfish use olfaction or taste for wake tracking. Future ablation experiments will reveal whether smell, taste, and/or hydrodynamic stimuli provide the sensory cues used during wake tracking.

Wakes are a ubiquitous consequence of physical objects moving through a fluid. Doall *et al.* (28) showed that copepods follow their mating partners by using chemical cues in the wakes. Our study shows that at least one species of teleost can make use of the hydrodynamic/chemical cues in the wake to track its prey. We suspect that exploitation of these cues is common among large animals that track moving prey through water.

Denhardt et al.¶showed that harbor seals can be trained to follow the hydrodynamic trail produced by a propeller-driven minisubmarine, using their whiskers for sensing the water movements. The wakes of fish schools condition a much larger area than that of individual fish and provide even more conspicuous tracks to be used by predators (29). The advantages of wake tracking may have promoted special adaptations in both hydrodynamic-and olfactory-receptor systems. One might expect specialization in the lateral line system, for analyzing hydrodynamic details of the wakes (25), or chemosensory specialization, comparable to the forked tongues of snakes, that facilitates tropotactic tracking of prey trails (30). These specializations await further exploration.

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Pimafix
an experience with an antifungal remedy

By A W Taylor.

Over the last few years my family's annual holiday usually started the day after the CSG Annual Open Show, with the wife thinking it was a little more than coincidence. My normal routine after arriving home after the show is to transfer the fish from my show tanks into bags and then float them in their tank to acclimatise. When I came to release the fishes back into their tanks, I discovered that a Corydoras ornatus had spiked the bag with its dorsal spine. I managed to release the fish from the bag without too much effort.

The following morning just prior to starting our outward journey I did a quick scan of my fish and thought everything looked OK but unfortunately the Corydoras ornatus had gone into hiding under quite a few pieces of bogwood and I gave it no more thought.

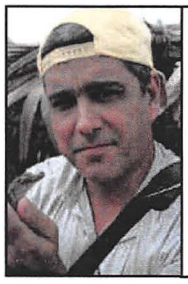
Returning home a week later after a thoroughly enjoyable holiday. I did a quick check on my fish and as everything seemed well, I decided to leave my maintenance until the following day.

The next morning I set about checking each tank in turn and carried out water changes. I had not given much thought to the Corydoras ornatus that had spiked its bag the week before but upon checking it I noticed that there was a fungal infection on it's dorsal spine where it had obviously been damaged in the bag.

Due to the hectic evening on the night of the show, packing, etc ; I had left the prizes that I had won in a box next to the fish tank and hadn't yet had time to put them away. In there was a bottle of Aquarium Pharmaceuticals 'Pimafix', so I thought I would give it a go and I duly dosed the Cory tank with a smaller dosage than recommended on the bottle.

After the third day of treatment there was a noticeable reduction in the area covered by the fungus and by the end of the sixth day the fungal infection was hard to see with the naked eye. I continued to use Pimafix for the next two days, still at the reduced dosage, and then stopped completely. I have to say that the infected Corydoras ornatus has been fungal free and the fin tissue is growing back nicely.

Usually when I try a new food or medication I like to monitor the water quality to see if the food/medication affects the filter bacteria, etc. Unfortunately my full range of test kits had depleted. Ph & GH readings were taken and there appeared no problems. So I guess what I am trying to say is that my experience with Pimafix wins it a thumbs up from me.



Hypancistrus zebra - Fast Fact Sheet

by Francesco Zezza

Biotope: Brasil, specifically Rio Xingu. L-46.

Tank

Attains a total length of (about) 10 cm, hence the tank doesn't need to be that big if it happens to be kept alone. Lots of hiding places are needed when attempting to keep more than one specimen. Those fishes are – in my own experience - VERY territorial ...

Water chemistry

No specific needs (simply avoid extreme environments) when looking to chemistry. On the other hand, an highly oxygenated environment is a must since these catfishes live in fast flowing waters in the wild. Water temp should be kept in the 'upper range'.

Spawning

It's said to be not that easy. Among other requirements you have to remember good water quality, water temperature of, at least, 27°C, balanced nutrition (animal matter needed) and "suitable" spawning caves. The usual clutch consists of 7-12 eggs (up to 5mm in diameter) and is guarded by the male (quite common among Loriicarids). Only sure report I found is in the book "Loriicaridae: The trick of the trade" by Larry Vines, containing, among others, suggestions on attempting to spawn these beautiful catfishes. I have NOT spawned this fish, and while attemping to do so I lost two specimens because I hadn't provided them with enough hiding places! Those cute fellows are territorial to the highest level. Believe me!

Food

These fishes do not rely that much on algae (as concluded by their small teeth which are not suitable to "scratch" algae), so you should add some animal matter in their diet (sinking tablets and worms of different kinds).

Tank Mates

The main, and possibly only, problem is the water temp required by this fish (in Rio Xingù water temp can rise up to 35°C). Then, it is not that suitable to be kept with cichlids (despite this fact I kept one of them for about three years in a Tanganyikan tank with no detectable drawbacks). Keep in mind these fishes are afraid of strong lighting. FINAL NOTE: this fish IS expensive attaining, in Italy, prices well over $100 for a single (extremely shy) specimen...

(Editors note: Although quoted as being very expensive, latest information is that *Hypancistrus zebra* are now forbidden to be exported from Brazil because of over collecting. Purchases can now only be made from people within the hobby who already have some).

L-Number

The taxonomy of those (SA catfishes) fishes is way more complex (unbelievably complex as it seems) than the one of cichlids! Lots of new discoveries, often by "local" collectors and/or traders with little or no idea of the real collecting point. To avoid more serious errors it has been decided to "tag" each fish (genus/species) with a number. "L" stands for Loricariids hence the "L-numbers"

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What's Happening in Brazil?

by

Hans Georg Evers

16/03/2005: The following report has been reproduced with the kind permission of the German DATZ magazine. It details the current situation in Brazil and gives reasons as to why we are unlikely to see certain L Numbers being exported from there for quite some time.

For weeks now there have been rumours throughout the aquarist community: "there will be no more shipments of ornamental fish from Brazil", "all plecos with L-numbers are forbidden from export" or "fish exporters in jail in Manaus" This is the word being spread via the internet and even in some magazines. So, what really is true in these stories and what can be expected for the future? To answer such questions I would like to give some information from two sources, firstly, that received from several members of the Brazilian export community themselves and secondly, what can partially be found on the internet. The latter mainly are Brazilian laws and fish lists which have been published under the cited addresses.

To give a clearer picture of the situation, I look back to 1989. Until this time the export of wild caught fish from Brazil was regulated by a negative list, published by the SUDEPE (Superintendência do Desenvolvimento da Pesca). This list included only those fish species that, as food-fish, were forbidden from export. . When the SUDEPE joined together with the IBDF (Instituto Brasileiro des Desenvolvimento Florestal) in the newly founded IBAMA (Instituto Brasileiro de Meio Ambiente e recursos Naturais Renováveis), the former, negative list was waived. In its place appeared positive list (Portaria no.1 dated 20. 12. 1989) containing 45 species plus largely all members of 5 genera (Ancistrus sp., Peckoltia sp., Corydoras sp., Otocinclus sp. and Hyphessobrycon sp.). A little later several additions brought the total to 79 species plus 7 genera (Portaria no. 477 dated 14.03.1990).

The recently valid list (Portaria no. 62N dated 10. 6. 1992) contained 172 and 3 genera, with a later addition of 2 species and one genus. That means that all together 174 fish species plus all members of 4 genera (Ancistrus, Peckoltia, Hyphessobrycon and Farlowella) are permitted for trade within, and for export from, Brazil. The list can be found on the internet under: www.petsite.com.br/pxlegisla4.asp.

When in 1986 the first beautiful plecos were found in the Rio Tocantins/Araguaia, Rio Negro, Rio Xingu and later on in the Rio Tapajós, aquarists worldwide soon coveted these spectacular animals. The German magazine Datz responded with the L-number system, which nowadays is well known in all countries where aquarists keep and breed these wonderful creatures. In the early days no scientific names were available for the most of these armoured catfishes and we called them Ancistrus spp. or Peckoltia spp. That was acceptable within Brazilian regulation, as all members of the genera Ancistrus and Peckoltia were permitted for trade according to the IBAMA list of 1989 and its additions. But very soon there were several scientific descriptions of new genera. Scobinancistrus, Hopliancistrus and Leporacanthicus were described by Isbrücker & Nijssen (1989). Lucia Rapp Py-Daniel (1989) described Baryancistrus and Oligancistrus and again Isbrücker & Nijssen (1991) described the most magnificent zebra pleco in the new genus Hypancistrus. The taxonomic changes were amended in the respective IBAMA list and the plecos continued to be exported under their Brazilian names and genus names Ancistrus spp. or Peckoltia spp. To give some examples: Baryancistrus sp. (L 18, L 81 and L 177, the "Golden Nugget") as "Amarelo" and Ancistrus spp. Hypancistrus spp. (L 4, L 28, L73) as "Picota" and Peckoltia spp.

In the year 2002, the newly elected Brazilian

government decided, in accordance with the Rio 92 convention, to create committees that should examine (amongst others) the ornamental fish trade. The corresponding conference took place in October 2003 in the Brazilian capital Brasilia, where people of the IBAMA, ecologists, other scientists and some managers of export companies discussed the mater exhaustively. They came to the agreement that (in respect of the L-numbers) undescribed species could be legally traded under the names Ancistrus spp. and Peckoltia spp. for a period of three years (2006) until they were scientifically described. The Brazilian ministry of environment MMA (Ministerio de Meio Ambiente), the IBAMA and CEPNOR (Centro de Pesquisa e Gestao de recursos Pesqueiros do Litoral Norte) published this decision in a document entitled "Relatorio da Reunião Tecnica sobre a Pesquisa e Ordenamento da Pesca des Peixes Ornamentais na Região Norte do Brasil". So, was everybody happy, or not?

Obviously not, for in November 2004 something quite spectacular happened in Manaus. The Brazilian federal police (Policia Federal) with the assistance of an "expert" (actually a junior student of the Universidade do Amazonas!) stopped the shipments of the three major export companies in Manaus, after these had been checked by the IBAMA officials and authorised for export. The policemen insisted that the shipment was illegal, as several fishes labelled as Ancistrus spp. or Peckoltia spp. were indeed members of Baryancistrus, Hypancistrus and so on. The entire shipments were brought to the research station of the INPA (Instituto Nacional de Pequisas da Amazonia) where an ichthyologist confirmed that these fishes were, in fact, members of Baryancistrus, Hypancistrus and so on. In due course, the owners of all three companies involved were imprisoned for 48 hours and received high penalties. TV and print media in Brazil made a big thing out of it, but unfortunately nobody mentioned the agreement of one year previous.

In light of the uncertain situation, Manaus export companies decided to immediately halt all shipments of undescribed L-numbers that were not members of the genera Ancistrus or Peckoltia. But companies in other parts of Brazil (Belem, Rio de Janeiro, São Paulo, Recife, etc.) were unaffected and continued to export the plecos legally.

However the saga continues. On 28th May 2004 the MMA published a list of Brazilian invertebrates and fishes threatened by extinction. This list consists of 156 fish species that are forbidden from being caught, traded or even bred in captivity (the only exception is for scientific studies) from the 1st July 2004. Since the 1st December 2004 these fishes are explicitly excluded from the trade, even though mentioned on the IBAMA positive list. Amongst many others the best known is Hypancistrus zebra, the zebra pleco. But also other, mainly endemic loricariids, Scleromystax (Corydoras) macropterus and the well-known Mimagoniates spp. as well as some other characids are listed. Marine aquarists can also forget about Gramma brasiliensis and Elacatinus figaro, two very well known species. All those fishes are forbidden for export from Brazil and they will not appear again unless removed from this list. Aquarists now have the responsibility to keep stock alive and to go on breeding these fish in their aquaria. The complete list is available under: www.ibama.gov.br/pescaamadora/legislacao/visualiza.php?id_arg=104.

In Brazil the discussion about a stricter regulation of the ornamental fish trade and catching of wild animals has come up yet again. Marine fish are already traded much more strictly now according to a positive list, allowing only allocations of 500 or 1000 specimens per species and company. Voices are being raised to totally forbid, or at the very least, radically restrict trade in freshwater fishes, too. At the present time (end of December 2004) the IBAMA is undecided and is still considering whether to establish a negative list (favoured by the trade) or a larger, positive list of almost 800 species. The trade meanwhile united its forces and founded the ABREA (Associação Brasileira das Empresas de Aquariofilia) to secure a better and more powerful position in discussion with officialdom.

I find it highly problematic to blame fish collecting alone for the extinction of certain fish species, especially in the Amazon. This might be possible with some endemic fish species in small areas, but must be proven by intensive fieldwork. Thousands of Brazilians make a living from collecting cardinals and suchlike. What will these people do, if they are forbidden to catch fish? Former experiences have already shown that these people turn instead to exploit the forest, burn it for cattle grazing, or digging for gold. They have no choice. For nature, however, this would be fatal. Instead, it has to be considered that people will actively protect the rivers, if they want to go on collecting the fishes in years to come, and rely on it for their continued livelihood. (I attempted to highlight this by reporting an example in the Brazilian state of Rondônia, see Evers 2002).

At present it seems as if the Brazilian government is working hard to legislate against fish collecting. But where is the wider engagement to protect against the destruction of such natural resources and habitats? Are they really doing enough in this regard? We all remember well that the Brazilian oil company Petrobras paid only relatively small fines after crude oil polluted the Guanabara bay in Rio de Janeiro. It is easy to damn a fisherman collecting Hypancistrus in the rapids of the Rio Xingu, but who is fighting the plans of Eletronorte (North Brazilian Electric Energy Company) to create a huge dam at Altamira, potentially killing millions of fishes and bringing to near extinction the highly specialised loricariids in the rapids? We have witnessed this already in the Rio Tocantins, where the Tucurui damn was built years ago. Many fish species from there are now mentioned in the MMA list.

I believe that every aquarist should be aware of this problem. Speaking for myself, I would be happy to pay more for a wild caught fish if people, who are not as lucky as we in the so called first world are, can manage to feed their families and raise their children. I keep my fingers crossed that the Brazilian government will find an appropriate solution for all parties concerned.*)www.terra.com.br/reporterterra/greenpeace/fale2.htm; www.biodiversidadebrasil.com.b/programas/sinopse.asp?pin=O&ID=710;www.ipag.org.br/home.html;www.institutoaqualung.com.br/info.

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Author: Hans-Georg Evers

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Rules:

Items for the fishkeeping hobby only.

All Electrical Goods must have a Name and Telephone number on them, together with the condition of the item i.e. Spares, Working Order, Faulty etc..

All plants and fish to be auctioned should be in clear plastic bags, or jars large enough for them. Large fish may be offered in plastic containers/buckets. Fish should be identified (Common or Latin names). 'Painted' fish will not be auctioned.

There is a 15% commission to the Catfish Study Group on all sales. Payments to vendors will be made at the interval or at the end of the Auction.

The CSG is in no position to accept responsibility for the condition of any item sold at the auction or to exchange any item purchased. If in doubt, bid for an item 'as seen'. The vendor's name will be available to the purchaser, in the event of a problem, on the day only.

Philip Henry Gosse *(1810-1888)*

By A. W. Taylor

Philip Henry Gosse was born in Worcester, England, in 1810. He was the second son of a 'miniature portrait artist'. His mother was the driving force in his family, making sure that her children had a good education, and by the time he left school at fourteen he could speak both Greek and Latin fluently. However local employment was at a minimum and Philip found himself at the age of seventeen being sent overseas to Newfoundland, where he took up employment as a whalers clerk.

In 1835, he left the whalers office and went out aimlessly wandering around North America, It was a hard life for the young Englishman, at times going without food and shelter and on occasion earning a living as a farm labourer or even as a teacher. It was during these years that Philip became a devout Christian and also found the Natural world fascinating. Due to the hard times he was enduring he returned to England in 1839. The following year Philip published his first book 'The Canadian Naturalist'. Although the book was not a huge success, it was described in some quarters as a good piece of descriptive work mainly due to his artistry of flora and fauna in minute detail; a skill which he had inherited from his father. The Society for the promotion of Christian knowledge offered Philip a commission to write more books and it was during this time Philip wrote two of his finest books 'The Ocean' and 'An introduction into Zoology'.

In 1844 Philip undertook to go to Jamaica as an 'Insect collector' and he spent the next two years there. During which time he also became fascinated with the bird life on the island. Upon his return to England he wrote a series of descriptions with accurate drawings of one hundred and twenty eight species of birds found on the Island, some of which were new to science at the time. His book 'A naturists sojourn in Jamaica' was acclaimed a piece of work of great value by scientists, including Charles Darwin, and the public. For the next five years Philip hardly rested in his studies and writings, producing many scientific books on fauna ranging from birds to rotifers.

Towards the end of 1848 Philip married his first wife Emily Bowes and the following year his son Edmund was born. In 1851 Philip's health deteriorated and on doctors advice he moved out of London and went to live in the county of Devon. During his time there Philip turned his studies to the marine life around Devon and published such books as 'A naturists rambles on the Devon coast' (1853) and 'The aquarium' (1854), which made him a household name as his vivid descriptions and detailed drawings of marine life enthralled the general populace. The very first public Aquarium was opened in Regents Park, London in 1853 and was largely stocked by Philip from specimens that he had personally collected. (The Oxford English Dictionary has credited the term 'Aquarium' to Philip Henry Gosse).

In 1856 The Royal Society made Philip a 'Fellow of the Royal Society', describing his work as a considerable contribution to Natural Sciences. However Philip's life was shortly to go through some stressful times both privately and professionally. It was during 1856 after receiving his 'fellowship' that his wife Emily was diagnosed with breast cancer and finally succumbed in February 1857. It was during this year that his financial investments failed, leaving him with few resources. Professionally, as a devout Christian, he found himself more and more at odds with his beliefs and the prevailing scientific theories of the time. Because Charles Darwin had immense respect for Philip, he chose him as one of the leading intellectuals of the time amongst others, to 'sound' out his theories of evolution. Philip found himself more and more at odds with himself, as although he respected Darwin hugely, he could not accept Darwin's work, as this meant he would have to accept that his own faith in God was flawed. In 1857 to try and reconcile his beliefs about God and Nature, he published his book 'Omphalos', where he suggested that God had not only created the earth but had put the Fossils in the ground at the time of creation. This book was not well received even by his close friends and associates. Over the next few years Philip tried to come to terms with his religious beliefs and his love of Natural History. He also suffered severe bouts of depression. To try and lift his spirits he again left London and moved to Torquay on the Devon coast. Although still troubled by his faith and the conflicting evidence towards Darwinian theories, he produced some of his most popular work and found time also to re marry. In 1865 he wrote his final work on natural history 'A year at the shore'. After which he only published religious work.

Philip Henry Gosse all in all published some forty books and over two hundred articles and papers on both Natural history and religion before his death aged 78. He was buried in Torquay cemetery.

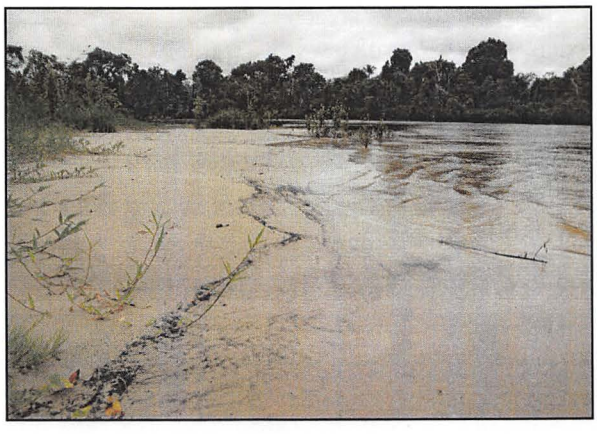
The home of *Corydoras atropersonatus* in Rio Nanay

BÂrd Farstad <bf@piranha.no>

The day is Tuesday 25 October 2005. We're leaving Iquitos in a rented boat with a driver and two fishermen. Our goal lies about 45 minutes up Rio Nanay and is, among other things to catch the *Corydoras atropersonatus*. The temperature is like it usually is in Iquitos around 30 degrees centigrade. This is our last day in Iquitos from a 14 days stay in the town. We have already collected lots of fish including some *Corydoras elegans, napoensis* and *semiaquilus*. Other fish species collected includes; tons of Pleco's, *Ancistrus, Apistogramma,* tetras, piranhas, different cichlids and lots of fish I don't even know the name of.

The Location

After stopping at a location in one of the tributaries of the Nanay River to try collecting some Discus without luck we stop at a location the fishermen say we could find the *Corydoras atropersonatus.*



The place we stop is in on a sandy bank on one of the curves of the Rio Nanay. It's a beautiful place where you could bring the family along for a nice day on the beach. But of course our goal was not to sit on the nice beach but to get into the water and find us some *Corydoras.*

Catching the Fish

We use a large net to collect the fish. Six of us are dragging the net at the time. It's important to keep the net close to the bottom, preferably under the sand, so that the catfish does not escape.

The anticipation is at this time great. It is therefore a huge disappointment when our first net does not contain any catfish at all. The first drag of the net was done more on the start where you have more vegetation so we decide to try one on the pure sand bottom. We also think that we were not keeping the net close enough to the bottom so the next drag we are careful to scoop in lots of sand from the bottom as well.

This time we are lucky. The net is full of fish, and sand. It does not take long until we see *Corydoras.* And it's the C. *atropersonatus*! We start filling our containers with the fish. To us the catch was good. After a few nets we have about 200 *Corydoras* and we are happy with that so we stop collecting at this location.

Most of the *Corydoras* we caught were the *C. atropersonatus,* but 5-10 of them were later identified as *Corydoras loretoensis*. Thanks to Ian Fuller for identification help.

The Water Parameters

Some facts from the catch in Rio Nanay. We measured the water parameters at two places in the river maybe 1000 m apart. The GPS location is for the first location only and where we caught most of the *C. atropersonatus*.

- GPS location: S 03_51,169', W 073_27,802'
- pH: 5,13 – 5,32
- Conductivity: 8-10 micro siemens
- Temp: 27,5-28,9_C

The Way Home

Our travel home was via Lima and we needed to ship the fish out as cargo. We spent one night in Lima where we changed water on all our fish and backed the fish in our normal luggage. The Atropersonatus was packed in large bags counting about 20-30 specimens. The flight home to Norway was with KLM and via Amsterdam. The trip from Lima took about 24 hours in total until the fish was home in our Aquariums.

Sadly when opening the bags at home I instantly saw that lots of fish were dead or in bad shape. All the bags had a bad spell and it turned out that more than 50% of the fish had died. So that left me with about 50 specimens of the *C. atropersonatus* and two of the *C. loretoensis*.

After having the fish at home for some weeks only one fish died, and of course it was the *C. loretoensis* so I now only have one left of those. But all the *C. atropersonatus* are doing fine. ■

A little piece on Corydoras weitzmani

Ian Fuller

Corydoras weitzmani, rediscovered at the beginning of this year but the first specimens were sent to Japan where they commanded a very high price, figures of $200.00 were reported. Then a few months later they arrived in the USA and thankfully the price was considerably lower at $80.00 (£47.00).

It was not until early November that they finally arrived here in the UK through the efforts of group member Neil Woodward, owner of Pier Aquatics. I am glad to report that at £24.00 each. The price was more in keeping with what we expect to pay for the rarer species of Corys here in the UK.

Since acquiring my group of them I have had contact from a friend and CSG member in the USA that he has successfully spawned his group and although not a large spawning, the fry are reportedly doing very well. The species also found its way into Germany, where an aquarist in Hanover has also successfully bred them. This is good news indeed as it is reported by the fishermen who have been collecting them that they are in danger of having their entire habitat destroyed by gold mining activity. It may very well be that the survival of this species will depend on hobbyists breeding it.

OPEN SHOW RESULTS 2005

1	ASPIDORAS	ENTRIES 2		
1	G Toft	Independent	A pauciradiatus	70
2	J Hetherington	CSG	A pauciradiatus	68

2	BROCHIS	ENTRIES 2		
1	P Aspinall	CSG	B multiradiatus	77
2	D & L Speed	CSG	B splendens	69

3	CORYDORAS "A"up to 57mm	ENTRIES 16		
1	Mr & Mrs S Brown	CSG	C pygmaeus	85
2	D & L Speed	CSG	C melini	84
3	D & L Speed	CSG	C33	83.5
4	Mr & Mrs S Brown	CSG	C loxozonus	83

4	CORYDORAS "B" over 57mm	ENTRIES 14		
1	I & K Wallbridge	Bradford	C concolor	84
2	Mr & Mrs S Brown	CSG	C imitator	81
3	P Aspinall	CSG	C leopardus	80.5
4	J Hetherington	CSG	C sterbai	78.5

5	CORYDORAS TYPES	ENTRIES 1		
1	Mr & Mrs S Brown	CSG	Corydoras sp.	77

6	A.O.V. CALLICHTHYIDAE	ENTRIES 5		
1	A Taylor	CSG	Scleromystax prionotos	77
2	P Aspinall	CSG	Dianema urostriatum	76
3	Mr & Mrs S Brown	CSG	Scleromystax prionotos	75
4	R Blackburn	Castleford	Megalechis personata	72

7	ASPREDINIDAE	ENTRIES 4		
1	J T Morris	CSG	Bunocephalus amaurus	85
2	J T Morris	CSG	Bunocephalus amuarus	84
3	S Grant	CSG	Agmus lyriformis	83
4	P Aspinall	CSG	Platystacus cotylephorus	72

8	AUCHENIPTERIDAE	ENTRIES 6		
1	I & A Mogford	SUTTON	Liosomadoras oncinus	78
2	D & L Speed	CSG	Trachelyichthys exilis	75
3	A James	CSG	Auchenipterichthys thoracatus	74
4	P Aspinall	CSG	Trachelyichthys exilis	73

9	BAGRIDAE	ENTRIES 6		
1	I & A Mogford	Sutton	Pseudomystus siamensis	83
2	P Aspinall	CSG	Mystus wyckii	81
3	R Blackburn	Castleford	Mystus mysticetus (Judged as vittatus)	78
4	I & A Mogford	Sutton	Leiocassis peocilopterus	75

10	DORADIDAE	ENTRIES 4		
1	P Aspinall	CSG	Platydoras costatus	81
2	P Aspinall	CSG	Agamyxis pectinifrons	80
3	R Blackburn	Castleford	Acanthodoras spinossimus	76
4	B Aspinall (J)	CSG	Amblydoras hancocki	73

11	LORICARIIDAE up to 130mm	ENTRIES 9		
1	I & K Wallbridge	Bradford	Parotocinclus maculicauda	86
2	I & K Wallbridge	Bradford	Parocinclus maculacada	84.5
3	Mr & Mrs S Brown	CSG	Parocinclus spinosoma	84
4	P Aspinall	CSG	Hypancistrus zebra	79

12	LORICARIIDAE over 130mm	ENTRIES 7		
1	I & A Mogford	Sutton	Megalancistrus parananus	89
2	B Aspinall (J)	CSG	Scobinancistrus aureatus	86.5
3	I & A Mogford	Sutton	Crossoloricaria rhami	86
4	P Aspinall	CSG	Hypostomus regani	85.5

13	LORICARIIDAE L&LDA Nos up to 130mm	ENTRIES 13		
1	D & L Speed	CSG	L163 Big spot peckoltia	82
2	D & L Speed	CSG	L260 Hypancistrus sp.	80
3	P Aspinall	CSG	L260 Hypancistrus sp.	79
4	P Aspinall	CSG	L121 Peckoltia sp.	78.5

14	LORICARIIDAE L&LDA Nos over 130mm	ENTRIES 3		
1	P Aspinall	CSG	Peckoltia sabaji	80
2	Mr & Mrs S Brown	CSG	L200 Peckoltia sp.	73
3	D & L Speed	CSG	L200 Peckoltia sp.	72

15	MOCHOKIDAE up to 130mm	ENTRIES 3		
1	B Barnes	CSG	Synodontis multimaculatus	86
2	P Aspinall	CSG	Synodontis polli	79
3	A James	CSG	Mochokiella paynei	78

16	MOCHOKIDAE over 130mm	ENTRIES 16		
1	P Aspinall	CSG	Synodontis decorus	88
2	I & A Mogford	Sutton	Synodontis angelicus	87
3	A James	CSG	Synodontis angelicus	82
4	D & A Blundell	CSG	Synodontis alberti	80

17	PIMELODIDAE up to 100mm	ENTRIES 4		
1	D & L Speed	CSG	Microglanis iheringi	82
2	Mr & Mrs S Brown	CSG	Brachyrhamdia marthae	78
3	P Aspinall	CSG	Brachyrhamdia imitator	73
4	J T Morris	CSG	Microglanis iheringi	69

18	PIMELODIDAE over 100mm	ENTRIES 3		
1	P Aspinall	CSG	Aguarunichthys torosus	85
2	P Aspinall	CSG	Pimelodus pictus	82
3	P Aspinall	CSG	Pimelodus maculatus	79

19	COLDWATER CATFISH	ENTRIES 0

20	SPECIAL – UNIDENTIFIED	ENTRIES 1		
1	Roy Blackburn	Castleford	?	78

21	A.O.V. CATFISH	ENTRIES 8		
1	A Taylor	CSG	Akysis prashadi	85
2	D & I Speed	CSG	Hara horai	83.5
3	D & L Speed	CSG	Akysis prashadi	83
4	Roy Blackburn	Castleford	Akysis prashadi	82.5

22	PAIRS - ASP/BROCHIS/CORYS	ENTRIES 6		
1	P Aspinall	CSG	Corydoras leopardus	78
2	J Hetherington	CSG	Aspidoras pauciradiatus	77
3	Mr & Mrs S Brown	CSG	Corydoras duplicareus	75
4	Mr & Mrs S Brown	CSG	Corydoras sterbai	74

23	PAIRS – AOV CATFISH	ENTRIES 8		
1	Mr & Mrs S Brown	CSG	Scleromystax prionotos	82
2	B Barnes	CSG	Synodontis petricola	81
3	J T Morris	CSG	Hemiodontichthys acipenserinus	79
4	P Aspinall	CSG	Synodontis polli	77

24	BREEDERS ASP/BROCHIS/CORYS	ENTRIES 7		
1	A Taylor	CSG	Scleromystax prionotos	92
2	Mr & Mrs S Brown	CSG	Corydoras simulatus	91
3	Mr & Mrs S Brown	CSG	Corydoras duplicareus	90.5
4	Mr & Mrs S Brown	CSG	Corydoras similis	90

25	BREEDERS - A.O.V. CATFISH	ENTRIES 3		
1	D & L Speed	CSG	Loricariinae sp	**88**
2	B Barnes	CSG	Synodontis polli	87
3	B Barnes	CSG	Synodontis petricola	85

26	FAMILY CLASS Pair & Breeders Team	ENTRIES 4		
1	A Taylor	CSG	Scleromystax prionotos	167
2	B Barnes	CSG	Synodontis petricola	166
3	Mr & Mrs S Brown	CSG	Corydoras duplicareus	165.5
4	Mr & Mrs S Brown	CSG	Corydoras simulatus	161

27	BREEDERS – MASTER CLASS	ENTRIES 2	
1	Mr & Mrs S Brown	CSG	271.5
2	B Barnes	CSG	254

SPECIAL WINNERS 2005

Best Fish in the Show. The TetraMin Award
1 P Aspinall of CSG for a Synodontis decorus (Class 16)
2 D & L Speed of CSG for a Microglanis iherengi (Class 17)
3 P Aspinall of CSG for an Corydoras pygmaeus (Class 3)

Best Breeders, The Linnaeus Award presented by TetraMin
A Taylor of CSG for his team of Scleromystax prionotos

Best Overall Synodontis Species, presented by LMB Aquatics
P Aspinall of CSG for a Synodontis decorus

Best Catfish Over 300mm – J T Morris Trophy
P Aspinall of CSG for his Mystus wyckii

Best Corydoras - Yvonne Cank Memorial Trophy
Mr & Mrs S Brown of CSG for their Corydoras pygmaeus

Highest Pointed Exhibit (Not a single fish) – Clint Cup
A Taylor of CSG for Breeders team of Scleromystax priontos - 92

Junior Trophy – Amanda Junior Cup
B Aspinall of CSG for his Scobinancistrus aureatus

SPECIAL CHOICES 2005

Secretary's Choice, donated by A & D Hodges
P Aspinall of CSG for his Agamyxis pectinifrons (Class 10)

Show Secretary's Choice, presented by B Baldwin Trophy
I & A Mogford of Sutton for a Panaque albomaculatus (Class 11)

Social Sec's Choice, presented by J & J Mead plaque
R Blackburn of Castleford for a pair of Pseudopimelodus pulcher (Class 23)

Chairman's Choice, presented by George Waterhouse
D & L Speed of CSG for a Microglanis iheringi (Class 17)

Editor's Choice, presented by A M Taylor
D & L Speed of CSG for a Bunocephalus amuarus (Class 7)

Zoukai Choice, presented by A & L Morris
P Aspinall of CSG for his Mystus wyckii (class 9)

President's Choice, Masterstaff Trophy
I & A Mogford of Sutton for a Synodontis angelicus (Class 13)

CONVENTION 2006

A two day event at

The Britannia Hotel
Almond Brook Road, Standish, Wigan, WN6 0SR
Tel: 01257 499988

17th to 19th February 2006 inclusive

Speakers include

Dr Stanley Weitzman & Lee Finlay
from the USA

Ingo Siedel, Hans-Georg Evers & Dr Stefan Hetz
from Germany

Doors Open At 0930 hrs

Entrance Fee

See overleaf for full details of prices

(Included in the price are all-day refreshments)

CATFISH STUDY GROUP

Convention 2006

PRICE LIST

ENTRANCE FEE

One day. Saturday	Members	£9.50	None members	£12.00
One day. Sunday	Members	£9.50	None members	£12.00
Both days.	Members	£17.00	None members	£21.00

MEALS

Friday evening meal (three course) £11.95 Choice of three menus
Saturday Convention dinner (three course) £11.95 Choice of three menus

Note: - Menus will be made available shortly, please make your choices and return to me. To save any confusion, your selections will be recorded on your place cards.

Saturday and Sunday lunches (Carvery) £5.99 per day

The full package
(excluding accommodation)

Members	None Members
£52.88	£56.88

Ticket orders to: -

Ian Fuller
68 Canterbury Road,
Kidderminster,
Worc's
DY11 6EU
UK

ACCOMMODATION

Single per night	£48.00
Double/Twin	£60.00

Bookings should be made directly with the hotel, stating that you are attending the Catfish Convention to get the Convention rate including breakfast.

The Britannia Hotel
Almond Brook Road,
Standish, Wigan,
Lancashire. WN6 0SR
Tel: 01257 499988
res723@britanniahotels.com

CSG CONVENTION 2006

17th to 19th February 2006 inclusive

PROGRAMME

Friday 7.00 for 7.30	Informal Dinner followed by **Catfish Question Time**	with a panel of experts consisting of Julian Dignall, Lee Finley, Ian Fuller and others to be announced

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Saturday	9.30 am	**Doors open**	
	10.00	Program start	Introductions
Talk 1	10.15 - 11.30	**Lee Finley** The History of Fishkeeping	
Talk 2	11.45 - 12.30	**Stanley Weitzman** Hearing in Otocinclus	
Lunch			
Talk 3	2.00 - 3.15	**Ingo Siedel** The Rio Xingu in Brazil - Searching for Loricariids in the river with the highest "Pleco" Diversity	
Tea break 30 min			
Talk 4	3.45 - 4.30	**Stefan Hetz** Otocinclus respiration	
Announcements			
Evening	7.30 for 8.00	Convention Dinner	With after Dinner speech by a Mystery Guest

oOoOOoOo

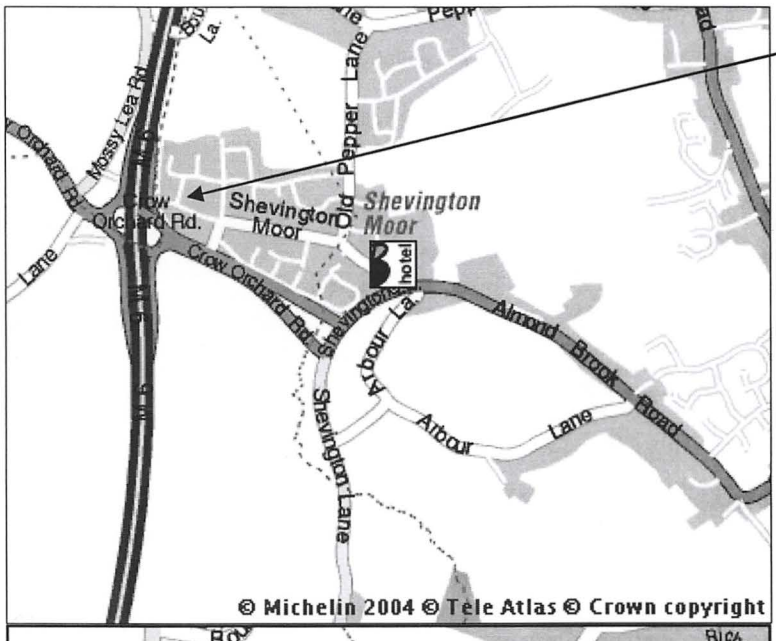
Sunday	9.30 am	**Doors open**	
	10.00	Program starts	Introductions
Talk 5	10.15 - 11.00	**Stefan Hetz** Breeding Hisonotus	
Talk 6	11.15 - 12.30	**Stanley Weitzman** Breeding modes in Characins	
Lunch			
Talk 7	2.00 - 3.15	**Hans-Georg Evers** "The Search for "Shampupa"	
Tea break 30 min			
Talk 8	3.45 - 5.00	**Lee Finley** Auchenipteridae	
End	5.15	Presentations	President

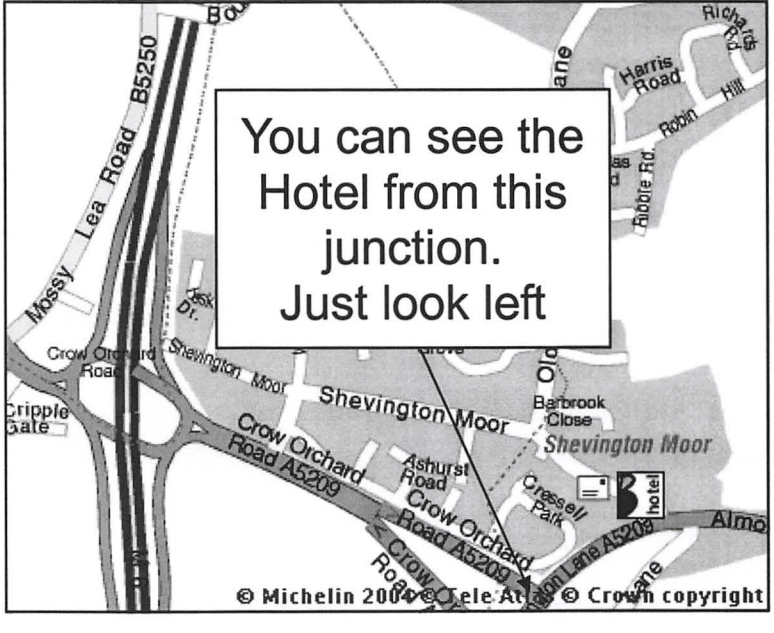
Directions to the Convention 2006

If in doubt, visit the web site where you can get directions from your area

BRITANNIA WIGAN HOTEL

Almond Brook Road,
Standish,
Wigan
WN6 0SR
Tel: 01257 499988 Fax: 01257 427327
email: res723@britanniahotels.com





Why not come on Saturday and visit some of the local amenities including

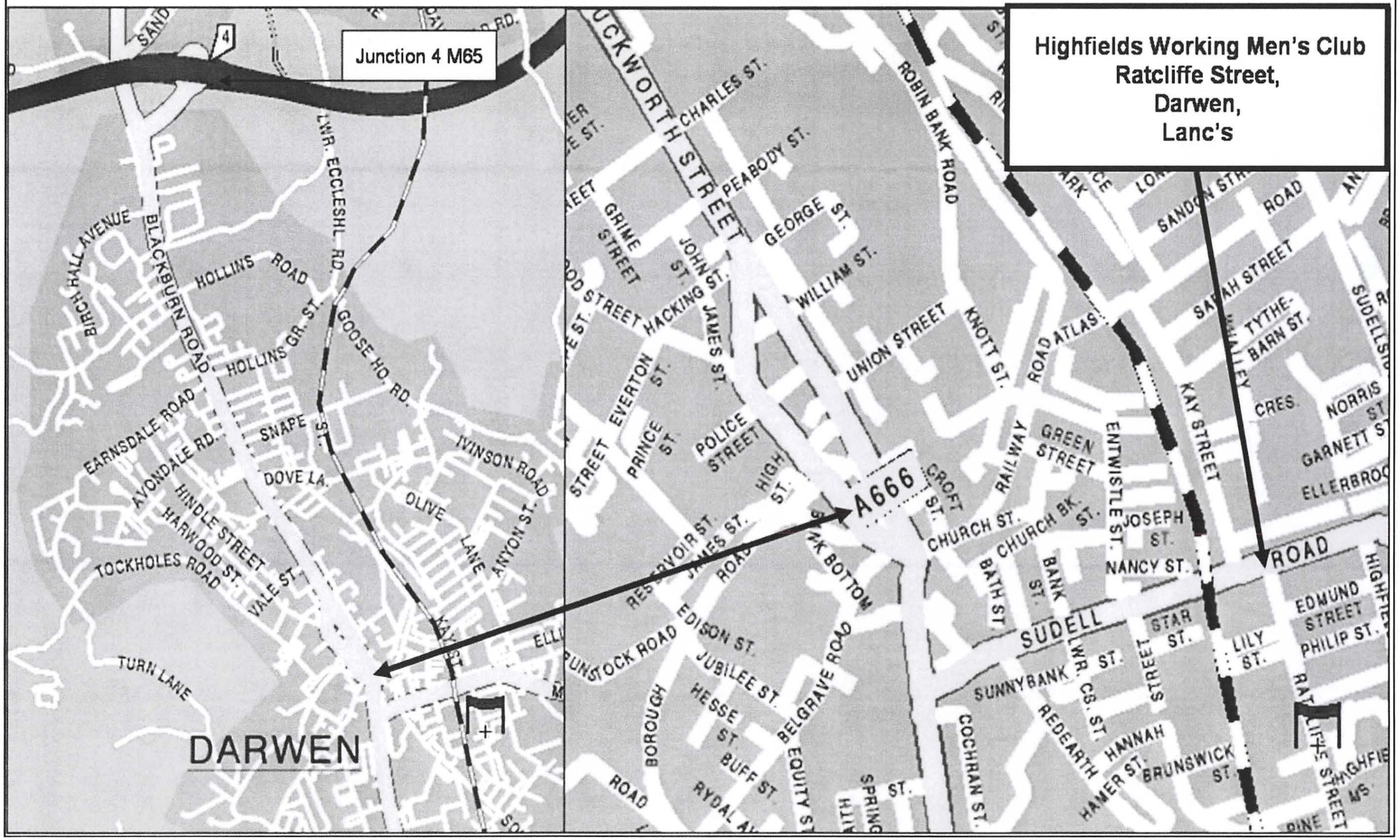
Pier Aquatics
and
British Aquatic
Superstore

Both have advertisements in this issue of Cat Chat and they have good selections of catfish.

Neither is too far away and you can stay the night at the hotel!

CATFISH STUDY GROUP

New meeting place starting 20th November 2005



And then there were three!

By Bill Hurst

Over the past 20 years, I spent a lot of time travelling backwards & forwards to Africa. During my longer stays in the UK I maintained my interest in keeping fish at home. Unfortunately my wife did not pursue the hobby with as much gusto. I used to try and breed various fish and on occasions was successful. Sometimes one of a pair would do the dirty on me and turn upside down. As a result of these situations I was left with a number of odd fish and for some five or six years I had three odd corydoras which I kept together. I had a zygatus, which died last year and I still have a melini and a panda. These were in a tank with a microglanis irheringi, some tetras and some guppies.

Imagine my surprise in November, this year, when I found this young chap swimming about in the tank. It was about half an inch in length. The tank is quite heavily planted, or more to the point, overgrown which explains why I hadn't seen the fish before.

I immediately set about searching for others but there

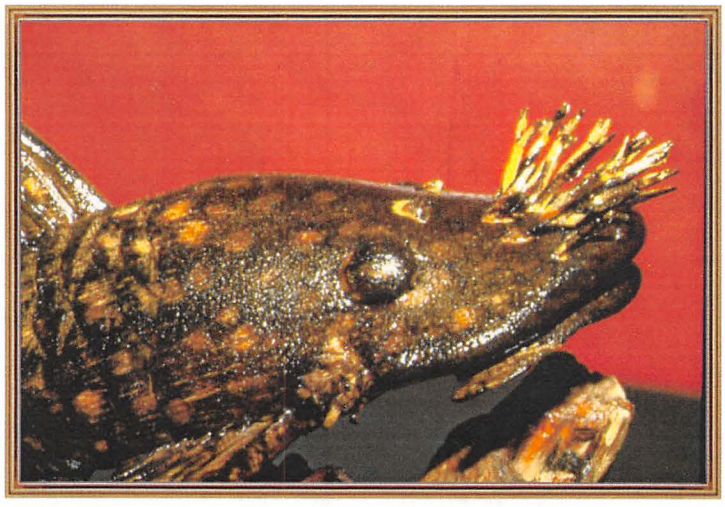
weren't any more. I assumed that they had been got at by the microglanis which was quickly removed to another residence. I believe that hybrids are sterile and therefore will not breed successfully - but then, how do fish evolve?

The mother and father of the fish pictured is, without doubt, a *C melini* and a *C panda*. So - *C melianda* or *C pandini* ???

The Catfish Study Group

would like to thank the following for supporting our

Convention 2006



G.B.W

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