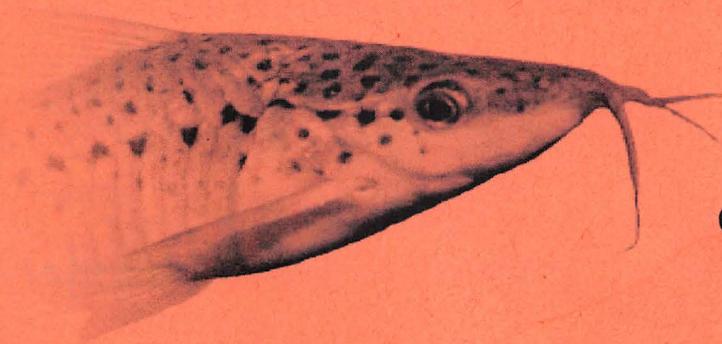


CAT CHAT

The Journal of the Catfish Study Group

Building a New Fish House - Ways, Means and Costs



Charles Frederic Girard

Infusoria & Paramecium



Spawning *Corydoras similis* (BAP)

Spawning Triggers



Spawning *Corydoras elegans* CW08 (BAP)

Volume 9 Issue Number 1
March 2008

Honorary Committee for the

Catfish Study Group

President: Trevor (JT) Morris

vice-President: Dr Peter Burgess

AquaticsDoctor@aol.com

Chairman: Ian Fuller

chairman@catfishstudygroup.org

vice-Chairman & Treasurer:

Danny Blundell

treasurer@catfishstudygroup.org

Secretary: Adrian Taylor

secretary@catfishstudygroup.org

Show Secretary: Brian Walsh

showsecretary@catfishstudygroup.org

Assistant Show Secretary:

Ann Blundell

Scientific Advisor:

Professor Isaac Isbrücker

Membership Secretary: Paul Fox

membershipsecretary@catfishstudygroup.org

Website Manager: Allan James

webmaster@catfishstudygroup.org

Cat Chat Editor: Keith Jackson

editor@catfishstudygroup.org

Print Manager: John Toon

printmanager@catfishstudygroup.org

Breeders Award Secretary:

Mark Walters

Bap.secretary@catfishstudygroup.org

Publicity Officer: Stuart Brown

publicityofficer@catfishstudygroup.org

Where We Meet:

The Club normally meets at the Hayfields Working Men's Club, 1 Ratcliffe Street, Darwen, Lancs, BB3 2BZ on the second Sunday of each month from 1pm. The exception is the annual Convention, held in the Spring at the Britannia Hotel, Almond Brook Road, Standish, Wigan.

The Catfish Study Group would like to acknowledge the help and support given by:

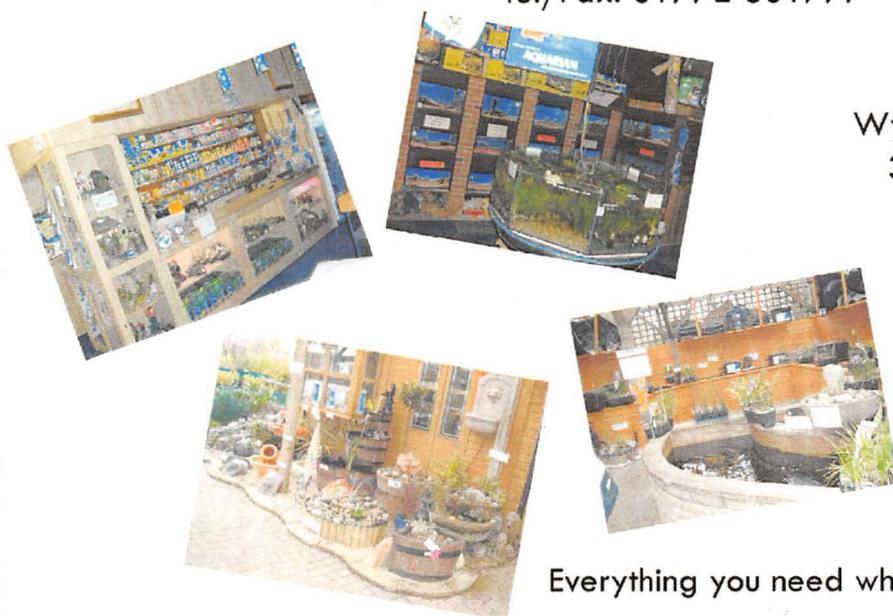
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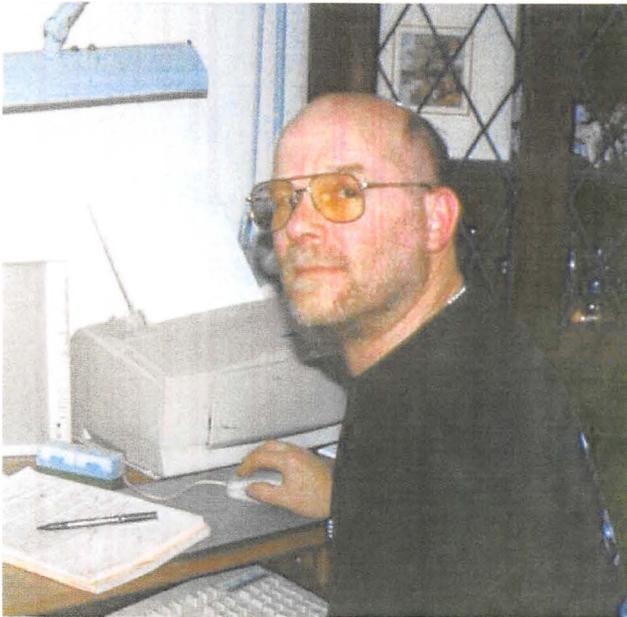


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The From Chair

Ian Fuller



Welcome to the start of another CSG year. OK I know we are three months into it but it is the start from our publications point of view. As you all know, the CSG year starts with the AGM in January, which is traditionally not very well attended. However this year proved to be a bit of an exception with around twenty-five members turning up. The committee remained pretty much as it was in 2007 with only a couple of exceptions. The Editor, Bill Hurst, stood down after a ten year stint in the job - thanks Bill for a job well done. Keith Jackson from Derby was duly appointed as the Group's new Editor and is the man who will be chasing you all for articles and stories, so look out folks he's very keen. Another appointment was that of John Toon as Print Manager, John will be in charge of all the Group's printing requirements and will tie in with Keith to ensure the magazine is ready on time.

February is the biggy month as far as the CSG is concerned because, as you all well know, this is when we hold our annual convention. This was the third full weekend event we have held and right up to the Friday of the event I was concerned that we were not getting the ticket sales I had hoped for. Other events in the final build up had also given me some concern in that both the British Killifish Association (BKA) and the Anabantoid Association of Great Britain (AAGB) would not be there with their stands, which was very disappointing. Fortunately the British Cichlid Association (BCA)

and the British Livebearer Association arrived in force and put on great displays - as did Mark Breeze with his Live Food stand. Other workshop stands included Brian Walsh, with a fantastic display of wood carvings; Peter Burgess with advise on parasites and diseases and a range of Aquarian, API and Rena products; David Marshall, with his new CD Magazine project "The Aquarium Gazette"; Danny Blundell, with information and demonstrations on fish photography. Ian Hallam from lighting experts Arcadia was also available to help with lighting problems and, last but not least, our very own Adrian Taylor with the CSG merchandise tables.

Other than to say that the whole weekend was without a doubt the best event we have staged so far and that every one that attended had a great time, I will leave the task of writing a more in depth report to others. I think the fact that we had member guests from the USA, Denmark, and Norway says a lot. This, along with speakers from the USA, Finland and the UK, made it a totally international event.

As I said earlier, I was concerned that ticket sales were not what I had hoped for but the people who did not come were the ones who missed out on a great event. The major disappointment for me was the lack of support from the largest aquatic federation in the UK, the FBAS. I wonder what my response will be when I am asked to put a CSG stand on at the Festival of Fishkeeping!! Anyway they are the ones that missed out.

Next year will see a couple of milestones for the group, the first being that from its original conception as the "Northern Area Catfish Group", a then area branch of the now defunct Catfish Association of Great Britain, we will be celebrating our thirtieth anniversary but this is not all. It will also be the tenth anniversary of the change over to the Catfish Study Group, so we will have a double celebration. Plans are already afoot but you will have to wait a while before any announcements are made. There is one change that we have already decided to make and that is the date. Because our traditional date in February falls on Valentines Day next year, we decided to move the event back a month and it will now take place over the weekend of 20th, 21st and 22nd of March 2009. This is the weekend after our spring auction. Please make a

note in your diaries so that you don't miss what will be the world's major Catfish event of the year.

Talking of Catfish events, October 17th through 19th is the date of the third All Aquarium Catfish convention in Maryland USA, hosted by the

Potomac Valley Aquarium Society (PVAS). The speaker line-up for the event is Julian Dignall, Devon Graham, Hans-Georg Evers, Wayne Leibel, Lee Finley and Ingo Seidel. This is also a fantastic event and those that make the effort to go will be well rewarded.

CATFISH STUDY GROUP
OPEN SHOW
AND AUCTION
21 SEPTEMBER 2008

Highfields Working Men's Club
1, Ratcliffe Street, Darwen
Lancashire, BB3 2BZ

Editorial

Keith Jackson

As I slide into the Editor's chair and pick up the blue pencil, the first thing I need to do is thank Bill Hurst for his many years of service. I've got some big boots to fill. Mind you, I do take a size 12! We've rationalised the position of Editor to reduce the burden, something that again stresses what Bill's been doing all these years. I shall be wielding the pencil and pounding the keyboard while John Toon will be doing the printing, collating and posting – and I know which job I prefer. Luckily, so does he and he doesn't want mine!

AGMs are never the most popular meetings on any club's calendar, which is a great shame in my opinion. For some reason, members see it as the Committee telling them what they've done and it's just a load of b-o-r-i-n-g waffle. In fact, it's the members' chance to hold the Committee to account and to move the club in a new direction – their direction. More to the point, without a keen committee no club can thrive and when, despite hard work, only a tiny proportion of the membership turns up it can be very disheartening. Next year, please try to come along. It's not the Committee's

club – it belongs to the members and the AGM is the members' meeting.

The other aspect of the Group's life that depends on the membership is, of course, Cat Chat. There's no journal without articles. I definitely want to see the more-technical ones continue but I would like to see more that are just aquarists' notes on something their charges have done. Don't worry if you think your language skills aren't up to much and don't be discouraged that you can't produce magazine-quality photos. So long as the message is clear, we can make something of it all between us.

It's certainly true that the Internet gives response times to problems a quarterly publication can never achieve but the Internet can be a difficult place to research, even with the likes of Google, Ask and Yahoo around. I'd like this to become a reference publication – somewhere that people turn to as a matter of course. At both the 2007 and 2008 Conventions, a professional complimented the CSG for recording the fine detail of fish behaviour that amateurs have the time to observe but professionals don't. That's real praise for a relatively-small club, which we are, and speaks volumes about its members. Well done but more, please!

Speaking of the Convention, anyone who missed this year's event missed a lot. From the first to last, all talks were of a high quality if occasionally (and inevitably) rather technical. The stands, were hives of activity and information. To top it all off, the food was excellent and conversations at the tables were always interesting and lively. There was a good turnout from our Continental members and Eric Bodrock made it all the way from Pittsburgh. Unusual fishes were discussed, debated, bought, sold and exchanged, much to the amusement and entertainment of the hotel staff! Goodness knows what the cleaning staff thought of all the humming and buzzing equipment in some of the rooms. I had a great time!

Ian and his organisational team deserve a big round of applause. All the hard work paid off but there were still some empty seats.

A full report will appear next issue, courtesy of Danny Blundell, but please mark the dates for next year, 20-22 March 2009, in your diaries and start saving. It will be worth it.

Magazine Deadlines

1st March, 1st June, 1st September, 1st December





CSG Auction Rules

1. All items offered for sale to be for the fish-keeping hobby only.
2. All electrical goods MUST display the name and telephone number of the vendor and a statement of the condition of the item i.e. working; spares or repair only etc.
3. All plants and fish offered for auction should be in clear plastic bags, jars or buckets suitable for the size of fish/es being offered for sale.
4. Catfishes, Loaches and Cichlids, MUST be double bagged; failure to comply will result in the item being returned unsold to the vendor.
5. GM, Painted, Tattooed or colour injected fish WILL NOT be auctioned.
6. All fish offered for sale must be identified by their common or scientific name.
7. All fish should be presented in suitable boxes and, for health & safety reasons, each box should weigh no more than 17kg. Any boxes over 17kg will be returned to the vendor with contents unsold.
8. Any fish offered for auction requiring re-bagging WILL incur a re-bagging charge of 50p
9. A 15% commission charge will be levied on all sales. Settlement to vendors will be made at times suitable to the CSG's officiating teller before the close of the day's activities.
10. If in doubt, only bid for an item as seen. In the event of a problem, the vendor's name will be made available to the purchaser only on the day.

The CSG accepts no responsibility for the condition of items sold at any of its auctions and is in no position to exchange or make a refund for an item.

Convention Sponsors

The Catfish Study group would like to thank the following convention sponsors for their continued support.



Charles Frederic Girard, 1822 – 1895

A small insight by A. W. Taylor



Charles Frederic Girard was born in Mulhouse, France on the 8th of March 1822. It was whilst as a young man studying biology at Neuchatel College in Switzerland under the famed scientist Louis Agassiz, that he found the study of reptiles and fish alluring.

Aged only 25, he accompanied Agassiz to the United States of America, as Agassiz's assistant at Cambridge University. It was during this time that Girard came to the attention of Professor Spencer Fullerton Baird of the Smithsonian Institute in Washington and, three years later in 1850, Professor Baird offered Girard the position as his principal assistant, which Girard accepted.

For the next ten years Girard published many papers on fish, reptiles and amphibians, with many of these works being carried out in collaboration with Professor Baird. During this time Girard even managed to find time to study and earn a M.D. at the Georgetown University in Washington. In 1854 Girard became a U.S. citizen; and five years later he returned to his native France to accept the Curvier prize from the institute of France for his works on North American reptiles and fishes.

When the American civil war broke out, Girard joined the Confederate forces and returned to France as the Confederacy's agent for the procurement of surgical and medical supplies; making a quick trip to the southern states of the U.S.A. in 1863 and returning to France the following year.

After the American civil war had ended Girard stayed in his native France, and took up the practice of medicine, going on to serve as a surgeon doctor during the Franco-Prussian war and published an important medical paper on typhoid after the siege of Paris. Although Girard remained in France practising medicine after the end of the Franco-Prussian war, he still found time to publish further works on natural history. Girard retired from professional life in 1891 and retired to Neuilly-sur-Seine on the outskirts of Paris, where he died on the twenty ninth of January 1895 aged seventy-three.

Infusoria and Paramecia

Mark Breeze

The second instalment of this series on live foods covers some of the micro-organisms that can be cultured as first foods for the very smallest of fish fry.

The fry of many fish species are so minute when they hatch that they find it impossible to eat traditional "first foods" such as crushed dry flake, newly hatched artemia, micro-worms, vinegar eels etc. For instance, the fry of some egg-layers, such as tetras, barbs, danios and rasboras, might only be 1.5mm in length. To accommodate the dietary requirements of these tiny fry a small live food source is generally required. Two such foods are infusoria and paramecia.

In the wild, fish fry will find micro-organisms within their natural environment. Submerged dead leaves and grasses will encourage the proliferation of minute life-forms that the fish fry feed on.

Infusoria is a term applied to organisms that can be found in infusions of decaying organic substances. It is a collective name for the group of micro-organisms that can include paramecia, algae, bacteria, protozoans, desmids, rotifers and a host of other small organisms.

Paramecia are found in suitable habitats all around the world and the global distribution of paramecia species is believed to be the result of the break-up of the super continent Pangaea over 200 million years ago. This continent was home to ancestral paramecia that have subsequently been separated by continental drift. The oldest reported fossil Paramecium was discovered in a piece of amber dating back to the Cretaceous period, over 65 million years ago.

Paramecia are single-celled micro-organisms belonging to the phylum ciliates. That means they are oval, flat creatures and are characterised by their external covering of continuously beating, thread-like appendages that move in a wavelike motion and serve to propel it through the water. Most paramecia are bacterivorous and feed voraciously upon bacteria on decaying organic matter, making them an important link in the detritus-based food chain of aquatic ecosystems. Under favourable conditions paramecia multiply rapidly, using a process known as binary fission where they simply divide and form small duplicates of themselves. They can also reproduce by conjugation in a manner similar to sexual reproduction in more complex animals.

There are a number of different species available that vary in size. The smallest are Paramecium trichium and P. aurelia at approximately 80µm in length. The largest are P. multimicronucleatum and P. caudatum, at approximately 350µm in length. Paramecium multimicronucleatum has been found to be one of the best for use in aquaculture as it promotes very rapid growth of fish larvae due to its large size and high nutritional value.

Method of Culture

Over the years there have been many recipes suggested for use by aquarists to produce infusoria. Examples are adding blanched hay or straw, potato, turnip, lettuce or other vegetable matter to aquarium- or tepid tap-water, allowing the resultant infusion to stand in a warm environment and hoping that any stray infusorians present produce a culture. This hit-and-miss method can be productive but, in most cases, does not result in a successful culture and produces only a foul-smelling brew.

I have found the best way to produce a successful culture is to make a vegetable-based infusion, using gram flour or banana skins, and then introduce a pure culture of paramecia. These are now frequently obtainable from biological- and aquaculture-supply

companies, live food-culture dealers and those fellow hobbyists who specialise in live foods.

Paramecia are very easy to keep. As long as their water is clean and free of chlorine they will thrive, tepid RO water being best. Clear plastic or glass one-litre bottles or jars can be utilised as culture containers.

An organic infusion is easily made by adding the smallest quantities of powdered milk or gram flour to the RO water - just enough to give the water a slightly cloudy appearance. The paramecia starter culture is then added to the infusion, which should be kept at a temperature of approximately 23C to 25C (73F to 78F). At this temperature, the water should start to clear in about four days and a pale, ever-changing cloud of tiny motes will be seen when the culture container is held to a source of light. Although just visible to the naked eye a microscope will be required to see an individual paramecium properly.

When the culture is thriving, add a few pinches of gram flour or other vegetable based component which will provide organic matter when the original organic infusion is nearing exhaustion. The culture will decline rapidly if all the nutrients are completely used up but it is possible to sustain the culture for long periods if additional organic matter is added periodically. Care should be taken though with the amount added as too much could result in the water becoming depleted of oxygen which will cause the paramecia to perish.

Ideally a new culture should be started every 2-3 weeks but, once a good culture is established, it is a very simple matter to prepare a series of cultures so that live fry foods are available at all times when that new brood takes you by surprise.

Collection is also relatively easy. If the culture is poured into a tall thin container, such as a clear wine bottle, the paramecia can be seen congregating around the water surface where they can be easily removed using a syringe.

A light can also be utilised against the side of the culture container and the paramecia will be drawn to it for collection en masse using a syringe or pipette.

The best way avoid adding any of the culture solution into the fry tank is to pour the culture medium through laboratory grade filter paper that is placed over a funnel. The paramecia will be

concentrated on the filter paper and can then be washed with fresh water directly into the fry tank. The filtered medium can be returned to the culture container as the culture will continue to produce.

Ideally, the paramecia should be fed as often as possible and in relatively small quantities so that the fry tank does not become polluted by the culture solution. Feed directly into the brood so that the fry should not have to search for the paramecium.

A drip feed system can also be utilised to feed in small quantities over a predetermined time period, which is ideal when frequent feeding regimes using other methods cannot be maintained.

The next instalment in the series will introduce some of the secondary live foods that might be utilised when infusoria and paramecium has served its purpose. The nematodes: Microworm, Banana Worm and Vinegar Eel.....

Spawning *Corydoras similis*, Heironimus, 1991

Presented for the CSG B.A.P. by Adrian W Taylor. F.N.A.S. Dip; MB.

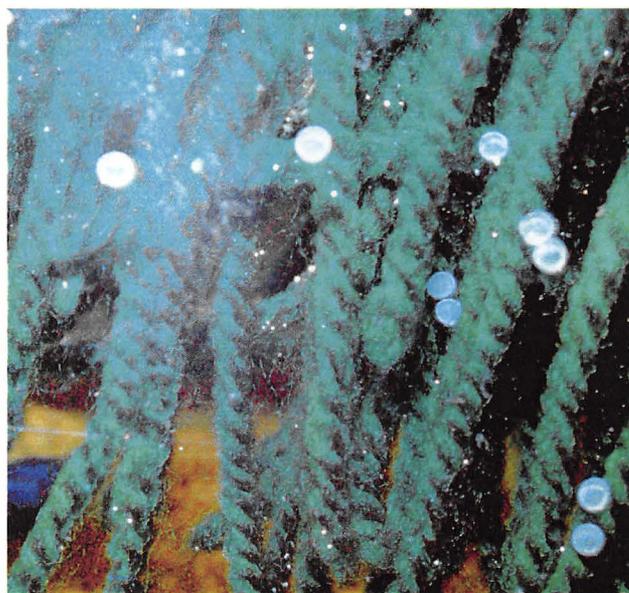
In 2005 I obtained a group of *Corydoras similis* from fellow CSG member Stuart Brown that he had been breeding and I also managed to spawn them on a couple of occasions in 2006.



It was this Brazilian Corydoradinae that I decided to spawn again and this time with the intention of entering them in the groups Breeders Award Scheme. Having looked at my own spawning logs from the time when I first spawned them, I duly set up a spawning tank having the same dimensions, decor, substrate and filtration. The aquarium measured 38cm long by 26cm high and had a width of some 30cm. A small, internal, power filter was added, this being placed at the rear of the aquarium; sand was added as a substrate and a nylon-spawning mop was hung in the front corner of the aquarium. Aged water, having a neutral pH and a temperature of around 27°C, was used and two males and three females were then added some twenty-four hours later. Over the next two weeks the fish were fed alternately on Tetra Tabi-min, white worms and Aquarian catfish tablets and water changes were carried out at a rate of 30% every fourth day. When the females appeared to becoming more rotund, I increased the frequency of water changes to every other day using water that was cooler by some 10°C. For the next three days the females could be

observed lazily swimming up and down the sides of the aquarium. However, the males did not involve themselves in this activity.

Entering my fish room on the morning of the fourth day, I found an amount of eggs on the front glass of the tank and, upon further inspection, I discovered eggs, 2mm in diameter and slightly opaque in colour; not only on the aquarium sides but in amongst the nylon spawning mop, these I carefully removed to a hatching tray and aerated. The water parameters at the discovery of the eggs were: - Temperature 26.5°C, pH 6.8, dGH 3°C and a KH of 3°C.



The eggs hatched some thirty hours later and the fry took a further twenty-four hours to absorb their yolk sacs. It was at this time I moved the fry into a growing on tank having similar water parameters to the aquarium used for spawning. For the first three days the fry were fed on a mixture of infusoria and

marine invert food and this was then replaced with alternative feedings of micro worms, newly hatched brine shrimp and finely powdered flake food. Water changes for the first month on the fry tank were carried out at a rate of 15% every day. After a month the fry had grown considerably and were moved on to a larger aquarium, which was filtered using a small external power filter and water changes changed to a frequency of 25% every fifth day.

When I spawned these in 2006 in the fry were six albinos, four of which died within the first few days of hatching and one a couple of weeks later. The remaining albino lived for over a year although it never exceeded 25mm in length and always has the appearance of being a weakling, which is often the case amongst albino forms; however, this albinism never occurred again during the last three spawnings.



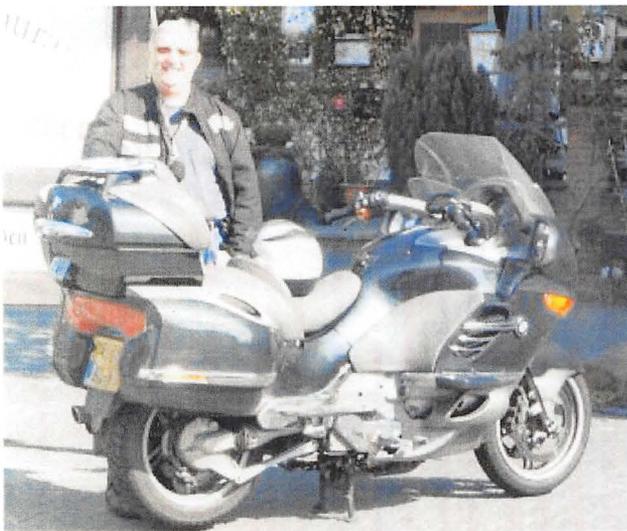
Fry at One Month



Fry at Three Months

Meet the Member

Keith Jackson



Like most people of my generation, I suppose, my fish-keeping experience started with a fairground goldfish. Quite how it lived for so long with irregular, total water changes, no dechlorinator and a basic diet of ants' eggs I have no idea but survive it did for quite a few years. My next attempt at the hobby came after I married. Our daughter was around 18 months old and getting under her mother's feet as only a toddler can. We wondered

whether a tank of brightly-coloured fish would occupy her so a two-foot tank arrived and was filled with guppies and other pretties.

It didn't do a lot for Nicola but it did get me interested, especially when a couple of angels spawned on the uplift of the u/g filter. They were terrible parents but I think that's when the bug really bit – I could get fish to breed!

One two-foot tank eventually developed into two four-foots and two three-foots on angle-iron stands in the living room. The constant buzzing of the air pumps became just unnoticed, background noise until we had power cuts, when the deafening silence really brought it home. I had a few successes, including spawning discus a few times, but things stayed much the same for many years.

One thing that did develop was a love of catfish, particularly the smaller, South American species. This led to joining the CAGB(NAG) in the early nineties but redundancy in 1994 and a return to university meant money got very tight and the fish tanks were an early casualty, with stock not being replenished as the occupants died off. The

uncertainty of university research work meant that the fish remained a small part of my life for a long time. Much too long, looking back, but that's life, isn't it?

When we moved, in 2002, we inherited a 2,000-gallon pond. I'd always wanted a pond but never had the space or cash to build one. For the next few years, this became my fish-keeping centre-of-operations. I joined the East Midlands Koi Club and found myself Chairman a couple of years later, a position I still hold. My pond is not high-tech and doesn't have any gizmos but the fish are happy enough and that'll do for me.

My tropical fish-keeping was rekindled by an EMKC member who needed to move some fish from a tank at his company. The firm was moving and the tank had to go. Would I like them? Is the

Pope a Catholic? The embers have really burst into flame this time as I built a fish-house and have stocked it with Corydoradinae for the most part. A few species have spawned and I'm looking forward to making that a much more regular occurrence.

Another passion is motorcycle touring. I've had bikes for 40 years and still get a real thrill out of a good ride. Ruth and I have visited Belgium, France, Germany and Switzerland in recent years and I'm sure that there are many more miles to pass under the wheels of our BMW K1200LT. In the photo I'm outside a hotel near Cologne run by a fellow LT enthusiast who took us on some wonderful back-road runs in the area. Like fish-keeping, motorcycling attracts some wonderful people who easily become good friends.

Spawning *Corydoras elegans* sp. 'CW 08', 1st March 2007

Presented for the CSG B.A.P. by Mark Walters, CSG member 107



Adult *C. elegans* 'gold-stripe'

The group of four F1's, bred by Ian Fuller, were purchased as juveniles at the CSG auction in November 2005. Prior to the BAP record, they had spawned once. Although appearing similar to the true *Corydoras elegans*, these fish have a different colour pattern with a prominent gold stripe hence their common name. The fish have since been named under the *Corydoras* World classification as *Corydoras* sp. 'CW08'.

The group consisted of 1 male and three females, which were all gravid, and had reached adult size (3.5cm male, 4cm female) for the species. They were housed in a 60 cm species tank of approx 40

litres. Typical parameters were temperature 74F, pH <6 and dGH of 3. The tank was sparsely furnished with 10mm of play-pit sand, some bogwood, java moss and anubia. A few oak leaves were included to provide cover. No additional lighting was used, other than the fish house main light.

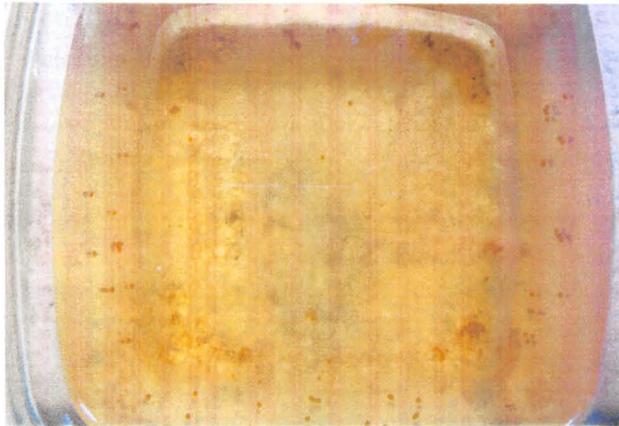
Typical food, given twice daily, included Tetra Prima, Aquarian flake, frozen bloodworm and chopped earthworm.

On 1st March 2007, courtship behaviour started with the male rushing up and down the side of the tank, occasionally pursued by a female. This was quite different to their normal, sedate behaviour. The spawning followed a 50% water change 36 hours previously.

Spawning behaviour was not observed and probably took place at night. Eggs were laid near the top of the tank, on the glass, in small groups, with up to 8 in each group. A few eggs were left in the adult tank, which were not eaten after 72 hours.

Over 150, 1mm, tan-coloured eggs were removed to a 1.2 litre tub. A few alder cones were added and light aeration. Where possible, eggs were re-adhered to the sides of the holding tub.

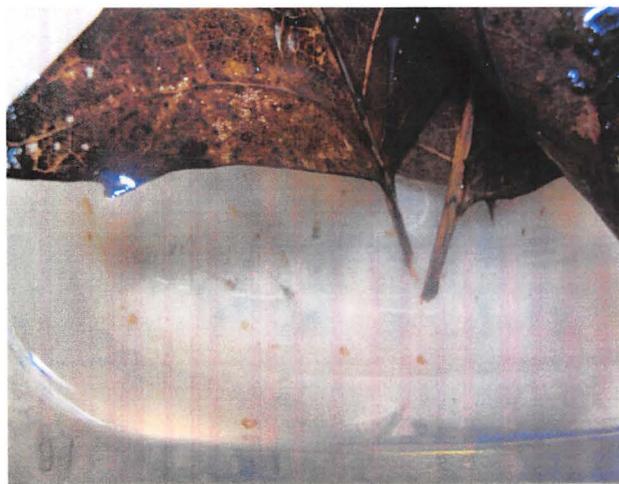
After 5 days at 74F, 50 of the eggs hatched. The 3mm fry were free swimming after 4 days.



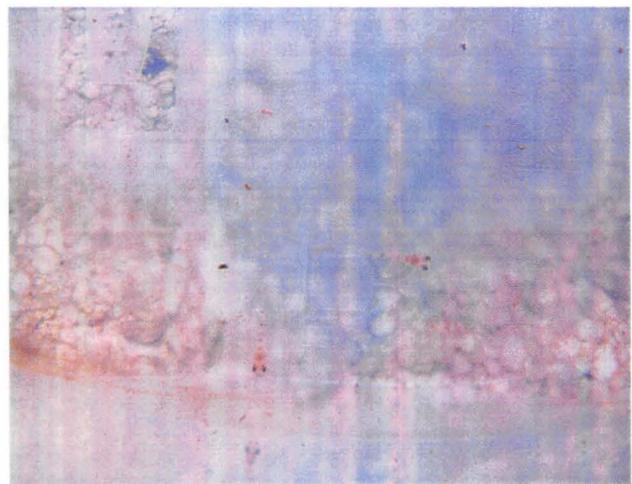
Elegans eggs removed to hatching tub

Java moss and tank-matured oak leaves were added to the holding tub three days after hatching to allow the fry to feed on the associated micro-organisms. Microworm and finely powdered dry food were introduced five days after hatching.

After 3 weeks, the 5 remaining 10mm fry were returned to the parent tank, where their growth-rate accelerated. After 6 weeks the young had reached a reasonable 15mm length and were actively feeding on adult-food debris and grazing on the sponge filters. The adult fish do not appear to harass the young after the 10mm stage. The young reached adult colouration after only 3 months at around an inch in size. The group spawned on three occasions in total and were sold on in November 2007.



Free swimming, 4 days after hatching



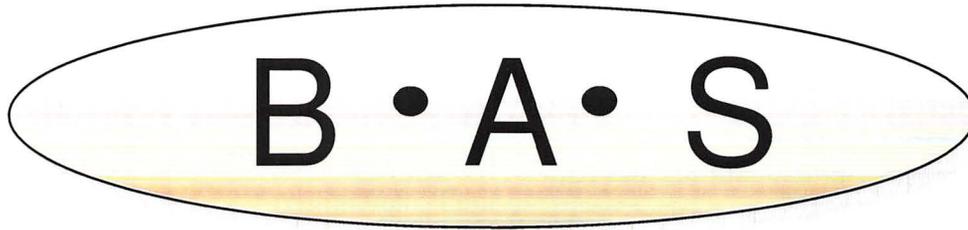
Fry at 3 weeks



6 weeks



3 months



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'What's New' - March 2008

Mark Walters

This article presents sightings and abstracts for five scientific papers for which further details are available.

Catfish sightings: Following on from the list of not-usual or new species available in the hobby, the following have been sighted: *Corydoras serratus*, *Brochis multiradiatus*, *Hara maesotensis*, *Hara miniscula*, *Microsynodontis polli*, *Batasio fluviatilis*, and *Pseudomystus heokhuii*

Selected scientific papers:

Kelvin KP, Ng HH (2008) – *Pseudomystus heokhuii*, a new species of bagrid catfish has been described from Sumatra. The 'bumblebee' catfish inhabits very acidic black-water biotypes and is a relatively small catfish (holotype measures 50.7mm) making it an ideal aquarium subject. The fish has probably been imported, undescribed, for a number of years and is making its way into the hobby in increasing numbers.

Ng HH (2007) - A new species of Akysis, *A. pulvinatus*, has been described from southern Thailand. The small 'hillstream cat' resembles *A. vespa*. The genus is found in fast flowing streams and rivers in south east Asia. The holotype measures 29.6mm typical of the small size of the other 16 members of the genus. The type locality is a stream with both slow-flowing and riffle (fast flow over rocks) areas. The substrate consists of gravel and larger rocks with the catfish being found between the rocks, especially in the riffle areas. When sampled, the water was clear with a temperature of 29C and a pH of 8. Other fish species collected were loaches, fire eels and *Hara* sp.

Ng HH, Kottelat M (2007) – A new bagrid catfish, *Batasio feruminatus*, has been described from the Ataran River drainage in Myanmar.

The paper also clarifies the identity of *B. affinis* and *B. havmolleri*.

Jerep FC, Shibatta OA, Zawarzki CH (2007) – A new species of Hypostomus, *H. multidentis*, has been described from the upper Rio Parana basin in Southern Brazil. This large genus comprises more than 130 nominal species, and the greatest diversity occurs in rivers of the Parana-Paraguay system. The group is one of the most complex, with many undescribed species. *H. multidentis* is found in the large rivers of the system in small numbers and is close to the fish known in the trade as L101, but we can't be certain. The name 'multidentis' refers to the high number of teeth (multus, many and dens, teeth).

Pereira, EHL, F Vieira and RE Reis (2007) A new species of sexually dimorphic loricariid catfish from south-eastern Brazil has been described. *Pareiorhaphis nasutus* can be distinguished from other members of the genus in having a longer snout. The new species shows marked sexual dimorphism: nuptial males have a slightly thickened pectoral-fin spine with somewhat enlarged odontodes on the lateral margins of head. *P. nasuta*, named after its elongate snout (from the Latin *nasutus*, meaning long-nosed), is known only from the upper Doce River drainage, where it has been collected in areas of rapids at streams and rivers amongst the loose rocks making up the substrate.

If you have any sightings you would like to share or would like to track down a paper, contact me for the full reference: mark.walters70@ntlworld.com.

Acknowledgement is made to Planet Catfish, Practical Fishkeeping and the All Catfish Species Inventory (ACSI) database for the original source of information on papers

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After 21 Years, Fishhouse No.2

Allan James



My first fishhouse was built in 1986 and, by 2007, was beginning to show its age, with a rotting floor etc. It was still workable but, with a bit of coaxing from my other half who wanted this space for her new patio, I was persuaded to build a new one at the other side, adjacent to the gable end of my house. I was slightly concerned that the structure would be too near the road and too high that the neighbours, although good, might object. The project had been in my mind for a couple of years and I decided that this would need to be the year if I wanted my ears to get a rest.

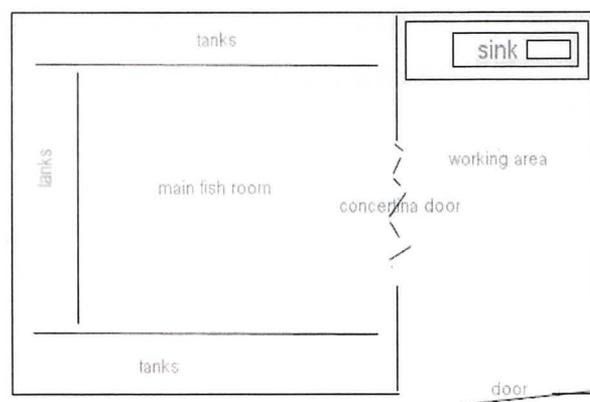
Since I am not getting any younger, I needed to make this fishhouse, which would be my last, as user friendly as I could and a sink with a work area was high on my list, along with a supply tank with a ball valve to return water after changes was on the cards as well.

I decided to make it a 12ft x 8ft so that three 8ft x 4ft x 3/4in, plywood sheets would be the base for the unit. Being a joiner by trade, I went for the wooden floor instead of concrete - I planned on tiling the finished floor - but this was my preferred option but a concrete floor is certainly a good way to go if you decide to build your own. I started the project at the beginning of March 2007 so as to give me a good run through the summer as it would be mostly the weekends, if I wasn't working, that I would be building it.

The ground base had slabs on it all ready so I started with 4in x 2in treated joists, levelled with bricks and breeze blocks, with the three 8ft x 4ft x 3/4in plywood sheets screwed to the framework. The ground runs on a slope and I quickly discovered that, by levelling the base, one end would be around 12" above the ground surface. That meant it could become unstable and dangerous so I decided that I would need to take away some slabs at the low end and dig down so that I could get the other end down to a manageable height. I also discovered that the height of the fishhouse would have been a problem as it would have been well above my fence to the detriment of my neighbours. This proved a bit of a pain but it had to be done and, in hindsight, was certainly the best option.



The plan shows the main fish room with a dividing wall from the working area. This can be closed off with the use of a plastic concertina (folding) door



which opens and closes on a top runner.

The image fh1 shows the area dug down to the level of the slabs on one side. I levelled the area underneath with sand. The joists are propped up level with bricks and the joists also have a damp proof membrane attached to them. As you can see the frame work has been started with 3in x 2in cls treated timber, which is 2½in x 1½in when finished. It costs around £5 for a three-metre length and is good value for general building work.



Image fh2 shows the construction with the framing completed apart from the bracing pieces in the corners, which I will show later. The height of the structure from the floor up is 79½in (2020mm) and is screwed down onto the floor. I would like to mention here that I decided on a flat roof over a pitched roof as it would not be so noticeable over the height of the existing fence. This is only a personal preference and there are arguments on both sides for the two different types of construction if you decide to go ahead with your own project.



I then fixed 5in x 2in joists for the roof, nailing them to the top runners of the framework. These had been run cut from five inches to four inches along the

length to give me a one-inch fall towards the hedge/road side of the construction. Your local builders' yard can do this for you and it takes water away from the door side which, as you can see in image fh3, will be opening out towards the gable end of my house.

Also in image fh3, the ¾in sheathing ply has been screwed to the roof joists. You can see that I have overlapped the door side of the roof over the



framework to give the door more protection from the elements and filled in between the joists front and back to give a surface for the facings that would be applied later. I also braced each corner to give the structure more stability.

The next stage is to apply the first layer of felt with adhesive and fix the weatherboard to the framework (fh4). This is when you can see that you are finally making progress and making the structure watertight in the process. You may notice that I fitted a U.P.V.C. double glazed door. You may think that this is an extravagance but it was my old kitchen door which I had kept for a year after fitting a new one. It would be maintenance free and draught proof, which was an added bonus.

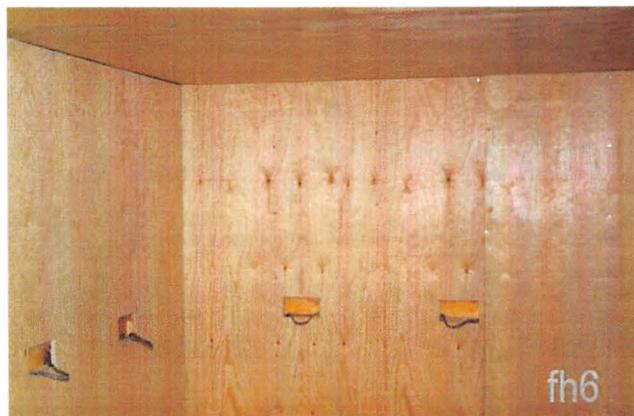


The next stage was to lay the second and final layer of felt, which would be the green mineral type and also applied with adhesive. A good practice on flat roofs is to extend out $\frac{3}{4}$ in so that any drips from any part of the roof will not run down and stain the weatherboard. I have pointed this out in image fh5. I also finished the corners of the structure with facings and coated it with two coats of a waterproof timber stain.



You will also notice the missing slab, the entry point for the electric cable that I dug underground, into the fishhouse and up the interior wall to be connected to a fuse box. The cable had been run from the house by my next-door neighbour, a qualified electrician, and I would advise anyone to go down this route, as electrics and water don't mix very well!! It was now into the end of April and it was now beginning to look like a fishhouse.

I now started work on the inside, fitting insulation wool in the framework and screwing $\frac{1}{2}$ in sheathing ply to ceiling and walls (fh6). I then proceeded to mark out and cut the holes for fitting the double sockets. I ran a wire ring-main around the walls, having to drill holes in each stud to bring the cable through. I had decided on plywood for the walls although I had fitted plasterboard in my old



fishhouse. Apart from blackening at floor level the plasterboard was not too bad but, with plywood, you can screw anywhere you want without having to locate a stud. It was, of course, much more expensive and later on I had serious doubts of my wisdom

The next stage was to fit all the sockets, later checked by my electrician friend. You can see in image fh7 the walls and ceiling were given 2 coats of a white, bathroom-quality emulsion to help combat any fungal attacks. You can also see the cables for the middle fluorescent light in the work area and the cables near the door for the main fuse box. The open switch box above the double socket is for an immersion heater which was given to me by my plumber friend. He was to prove a Godsend in the later stages when the sink and storage tank were to be fitted. His work and that of the electricians was what we call in the trade as the "barter system" and he had a bit of work needed on the exterior of his house, so no problem there.



This is where the plywood problem arose. I had been getting problems with my eyes when I was working inside. Nobody else could enter the Fishhouse because of the stinging sensation in their eyes and the back of their throats after a few minutes. This was a puzzle to me, which I thought I had cured when I painted the walls and ceiling but this did not make any difference and I was really deflated and downhearted. I wanted to get on, but I could not progress any further until this problem was rectified.

I asked at the local timber yard but they could not provide an answer but I heard from another joiner that they were now treating sheathing ply with different chemicals. I agreed that this was the problem I was facing. While these sheets are used for house building, they are fitted on the outside walls of buildings before the bricks/blocks are built

and, as such, fumes could never reach the interior, because there is framework, insulation and plasterboard on the inside of the plywood sheets.

Before this revelation I had cut through the walls to install 2 vents and also an electric fan to take the air out and fresh air in. This did not make any difference and it was in a chance encounter with a painter that I was told that with the emulsion covering I would never get rid of this odour. I would need to paint it again using an oil-based paint. I was not totally convinced of this and was even thinking of taking the entire ply off and reverting back to plasterboard. That would have been a massive task by now and I was getting very depressed with it all. The upshot of it was that I purchased a five-litre tin of cream undercoat (so I could see where I was painting) and applied a coat on the walls and ceiling. He did say that it would be a couple of days before the smell of the paint would subside but I couldn't believe the difference. Only a few days later, this stinging sensation to the eyes was completely gone and the undercoat had sealed in whatever was causing it. I applied another coat and, although I was painting again over the areas that were painted a few weeks before, I was so much more upbeat now that I had eradicated the problem.

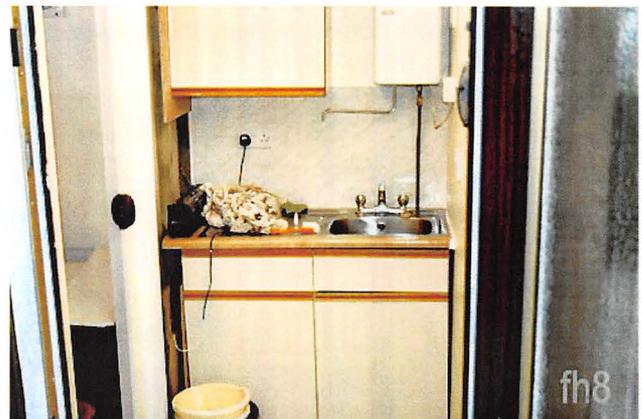
This is a lesson well learned. If you decide to use the cheaper sheathing plywood on your walls, apply either undercoat or gloss if you come across the same problem as me. You will not be able to last five minutes in an enclosed area with the untreated material.

I now concentrated on the floor and I picked up floor tiles that were on sale at one of the DIY superstores for a bargain price, which you can see in the final material count, and laid them before I got around to erecting the dividing wall to split the fishhouse up in to two areas. This would, of course, limit the amount of tanks that I would have but I hold great credence in that I can have an organised fishhouse where I can also relax (note the radio!) Hopefully, I would be spending a bit of time in there and the fish would be getting the best of my attention.

After the electrics were all fitted and working, I dug a trench from my existing outside tap around to the rear of the structure and laid a length of polyethylene blue pipe. This is quite flexible and able to be manouvred around corners. One end was connected to the pipe-work leading to my outside tap, and the other was fed through the wall to join up to the copper pipe work that fed the sink and to the 60-

gallon cold water supply tank on the other side of the partition wall. This was carried out by the plumber over two weekends.

The sink, unit and wall cupboard were all sourced from a new-kitchen fitting job that I had carried out about six months previously (fh8). They were the old units from this job that were to be thrown out and the bonus was that they were in quite good condition. You may also notice the water heater, which I had not thought much about, but was later pleased to be given. I was to find out that it would be an integral part of the work area, with hot water on



tap so to speak, as the main source from the tap was of course only from the cold supply. In this image you can also just see the pull handle on the dividing folding concertina door.

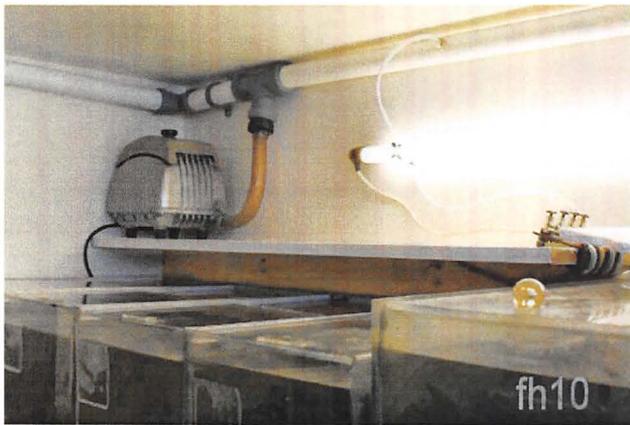
Before installing the pipe work I had started to set up my main show tank, which would be situated at the far end wall furthest away from the dividing folding door (fh9). This was a 6ft tank which I used to have in my living room for the best part of 15 years until my wife decided that she was getting the room decorated from top to bottom, and it had to go. It lay around the back of my house for two years knowing that, when the chance came to build the new fishhouse, I could set it up again in there.



Surprisingly, after a good cleaning, it did not leak. When it was up and running I was beginning to see the light at the end of the tunnel!

After this I started on the rest of the framework that would house the tanks from my old fishhouse and be 3 tiers high. The bottom tier would be for storage or the odd coldwater fish tank and the upper two for the rest of the tanks which would comprise around twenty in all: one 6ft., three 4ft, three 3ft and the rest would be miscellaneous-sized tanks for breeding purposes.

At this stage I also fitted the pipe system which would supply air to a lot of the smaller tanks with foam and bubble up filters (fh10).



In fh11 you can see the cold water supply tank that would feed the tanks after water changes, using a hose attached to a submerged pump. The supply tank was to be one of the more expensive single items that I bought. The ball valve was a great addition as this stopped the carrying of buckets to refill the tank, as it just filled up automatically.



I had thought of the chlorine in the water supply but I have had no problems on this score. The water is pumped up from the bottom layer, the water comes

in from the top, and the chlorine should dissipate after lying in the tank after 24 hours. There is, of course, an overflow pipe fitted from the tank that goes to the outside in case of the failure of the ball valve, which would lead to the tank overflowing.

At the right of image fh11 you can see a pipe bend which is to be connected to a length of 1½" pipe which will go around the bottom frames and will act as the takeaway from my water changes. There will be a few open upstands to take the water away. This again saves the use of buckets to and fro to the sink. The waste goes out to a pipe that was also laid underground and takes it to a drain which was already situated there under my driveway. I can of course use buckets when siphoning out of tanks with fry in them.

The final picture (fh12) shows the completed fishhouse with the addition of a vent which matches the vent on the other gable end. There is also an electric fan fitted in the fish room if it gets too hot in the summer!!



I concreted and cemented around the base of the structure so that any water will run away without going under the fishhouse. There will probably be some water which will go underneath but hopefully not too much. The fish room ended up just under 8ft x 8ft and the work area about 3ft 6in x 8ft.

On the left hand wall, as you enter the fishhouse, I intend to build a rack to hold about four 24in x 12in x 8in tanks or equivalent. These can be used for cooler-water species such as *S.barbatus*, *prionotus*, *C. paleatus* etc. This is in the work area and is not heated so I will maybe be able to keep these tanks at around the mid sixties Fahrenheit. The main fish room is heated at night by a water cooled storage heater with a thermostat and the room is lit after lights out by a "dusk to dawn" bulb, so as not to

startle the fish when the lights come on automatically in the morning.

There is room in the future to add to the existing tanks by a further shelf to the top level, giving me an extra 14 tanks at 18in x 12in x 12in for breeding projects. The final images are of the finished interior.

I have given a rough breakdown of the costs of this structure. These prices (circa 2007, Scotland) will give you an idea of the costs involved. Depending where you live you may be able to get these materials at a more favourable price but, as I live in a rural area, the costing of many products leads to a higher cost of living compared to any fair sized city. This of course does not include labour but if you are skilled you would be doing the majority of the work yourself anyway.

Summary:

All in all I am quite pleased with the outcome, especially with the sink area, with the immersion heater and the addition of a small freezer for my frozen food. I would say it is invaluable. The supply tank also saves a great amount of time with the water automatically returning via the ball valve during water changes. I have added a stop cock outside which I would advise if you are having problems with chlorine or other water matters, as you can turn the fishhouse off, carry out your water changes, and then turn it back on again to let the supply tank refill.

The only problem that I seem to be having is condensation running off the plastic supply tank and onto the tiled floor. I did cover it with polystyrene and plywood but I am still having the odd wet floor due to this trait. This is due of course to the colder water drawn into the tank and I should not have this problem in the summer months. My old fishhouse had a purpose built wooden box for water with a

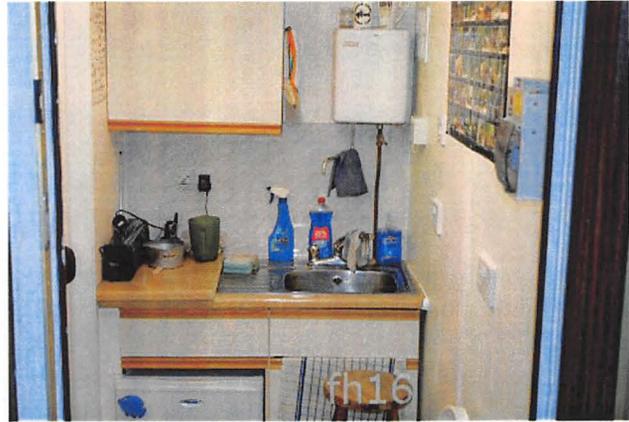
liner and I may revert back to this method in the future if it continues to present a problem.

This may give you an incentive to carry out your own Fishhouse project, taking some ideas from this build. Good luck!

allan@scotcat.com

Materials	Costings
6 @ 8' x 4' x 3/4" Sheething ply	£145
1127' 0" (343.509m) x 3" x 2" CLS	£514
13 @ 8' x 4' x 1/2" Sheething ply	£188
362sq ft (33.6309 sq.m) insulation	£84
160' 0" (48.768m) 5" x 2" tanalised	£112
Sink, sink unit, wall cupboard	n/a
UPVC door	n/a
40' 0" x 6" x 1" (12.192m) r/p/d	£29
740' 0" (225.552m) 4 1/2" weatherboard	£220
Electrics including sockets & electric fan	£80
3 x 2" CLS racks for tanks	£143
4' 0" x 2' 0" x 2' 0" storage tank	£60
Pipework for air and water	£80
Concertina door	£14
Paint	£30
Floor Tiles	£32
Total	£1731





Spawning Triggers - Are We Taking Them All Into Account?

Musings by Keith Jackson

It is well known that catfish spawnings can be triggered by a change in conditions. Some species need no more than a change of water and a good feed to get them going while others need an extensive programme of water changes or a simulated dry season. Others will just decide it's time to breed and get going without any particular work on the keeper's behalf. Some we find as being very easy to spawn and others have rarely or never been bred. There is no single, decisive factor to trigger any fish to spawn, with the possible exception of the commercial use of hormones and I'm sure none of us wants to go there!

Some spawning triggers are very complex indeed. In koi and other carp, it has been found a female does not develop roe unless conditions were right during the previous summer and the parent fish have been exposed to a combination of daylight length above a temperature threshold. Temperature level or daylight length individually will not do it, only reaching a total number of daylight hours above the critical level. This means carp farms in the UK need to keep their potential parents in completely artificial surroundings – heated ponds inside light-proof buildings – so that changes in temperature and light levels can be precisely controlled. Such regimes are unlikely to be discovered by amateur aquarists and it is clearly only the commercial aspects of carp production that made such research possible.

I have only recently begun to keep a significant number of catfish species but a number of things have struck me that make me wonder whether the so-called difficult species simply need something extra in their environment. 'Easy' species, such as *C. aeneus* or *C. paleatus*, spawn on the glass, placing

their eggs in single-layered clusters. My *C. 'schultzei'* lay close to the upstand of an undergravel filter. *C. paleatus* spawn where the stream from a powerhead hits the glass and my C-89s position their eggs in large 'clumps', usually behind something so that there is a gentle current but the eggs are not easily visible. They have also placed eggs in plain view on the glass in a filter outlet-stream. My sterbai lay in twos and threes all over the tank glass and my pandas and those kept by a friend only spawn on broad-leaved plants, such as *Hygrophila salicifolia*.

When I was lucky enough to see my *C. narcissus* spawn, I watched the female taking enormous care to position one or, at most, two eggs on the very edges of *Vallisneria gigantea* leaves, with each egg placed well away from the rest, though always where a strong current could wash over them. *S. barbatus* spawn in a similar spot to *C. paleatus* – mine are in the same tank – but *barbatus* pile their eggs on top of each other within the cluster while *paleatus* place them side by-side.

The event that got my mind working this way was spotting a female *C. burgessi* with an egg in her pouch desperately looking for somewhere to put it. This was not the normal quiet, deliberate investigation of various, though similar, sites before the eggs were placed but something quite different. She tested sites all over the tank but none seemed to come close to her ideal. In the end, she deposited one egg on a piece of bogwood and stopped spawning. I asked Adrian Taylor, who'd had these fish before, if he'd seen anything like it. "Oh, yes," he replied, "*C. burgessi* only spawn in plants lying along the bottom of the tank." So here we have examples of very variable spawning behaviour, with

C. burgessi clearly needing particular conditions to be successful or, it could be said, to even spawn even though the female is fully ripe.

A recent, unexpected spawning of my *C. septentrionalis* helped me make a discovery that goes some way to explaining how this might work. Like my *C. narcissus*, they placed their eggs in ones and twos, always in the top half of the tank. Most had been placed on the leaves some *Vallisneria torta* but others were placed on the glass but at a similar height above the substrate. The eggs had a very low adhesion and the slightest current - putting my hand into the water, for example - was enough to dislodge them. That suggested that they would lay their eggs where the current was no more than a gentle movement. A dim bulb began to glow.

I checked Ian's spawning logs on *Corydoras World*, then tried my luck on *Planet Catfish* and I really hit the jackpot. The images associated with this species show a collection site, albeit in the dry season, but the trees surrounding the water-course hang down low over where the water would be so it's not hard to imagine *C. septentrionalis* spawning on submerged leaves right at the edge of the river, where the flow is least.

At about the same time, my *S. prionotos* spawned for the first time. Again, they laid high up in the tank, mostly on *Anubias* leaves but also on the glass and, slightly bizarrely, on the sides of a floating tub I was using for some *C. panda* fry. The common factor in all the placements - in this case about thirty to a particular site - was again height above the substrate, though these were placed where the current was much higher and the eggs were very much more adhesive, as might be expected.

All this suggests to me that we must be not only concerned about average water temperature and parameters, water-change volume and frequency (along with their related temperature changes) and simulated dry seasons but also on the environment that we keep our spawning groups in. I believe that we need to research the spawning grounds of catfish

species, particularly those seen as being difficult to breed. That won't be easy, especially as the actual collection points may not be disclosed by the trade, always assuming these are near the spawning grounds.... I haven't a clue where to start but I'd welcome suggestions and any other experiences of species requiring particular types of site for their eggs.

After I wrote the first draft of this article, I heard Dr Michael Hardman's talks at the 2008 Convention. In his talk on the endocrine system and its part in catfish reproduction he said that the production of eggs and sperm is a two-stage process. The first is the secretion of gonadotrophin hormones from the pituitary gland, which stimulate the production of the germ cells that become eggs and sperm. However, the second stage cannot begin until the requisite environmental trigger(s) have occurred, causing the release of other hormones from the gonads themselves and the consequent ripening of the eggs and sperm. All of those occasions when the females are full of roe but don't spawn are simply because they're at the end of stage one but the triggers for stage two haven't happened. Those triggers can be environmental, the kind we often use, but can also be daylight or moonlight length. Fixed periods of day and night only occur very close to the Equator. Quite a few *Corydoradinae* don't live all that close to the Equator. How many of us use a timer for our lights? Lots, I guess. Now, how many use one that varies the daylight length? Practically none, I'm sure.

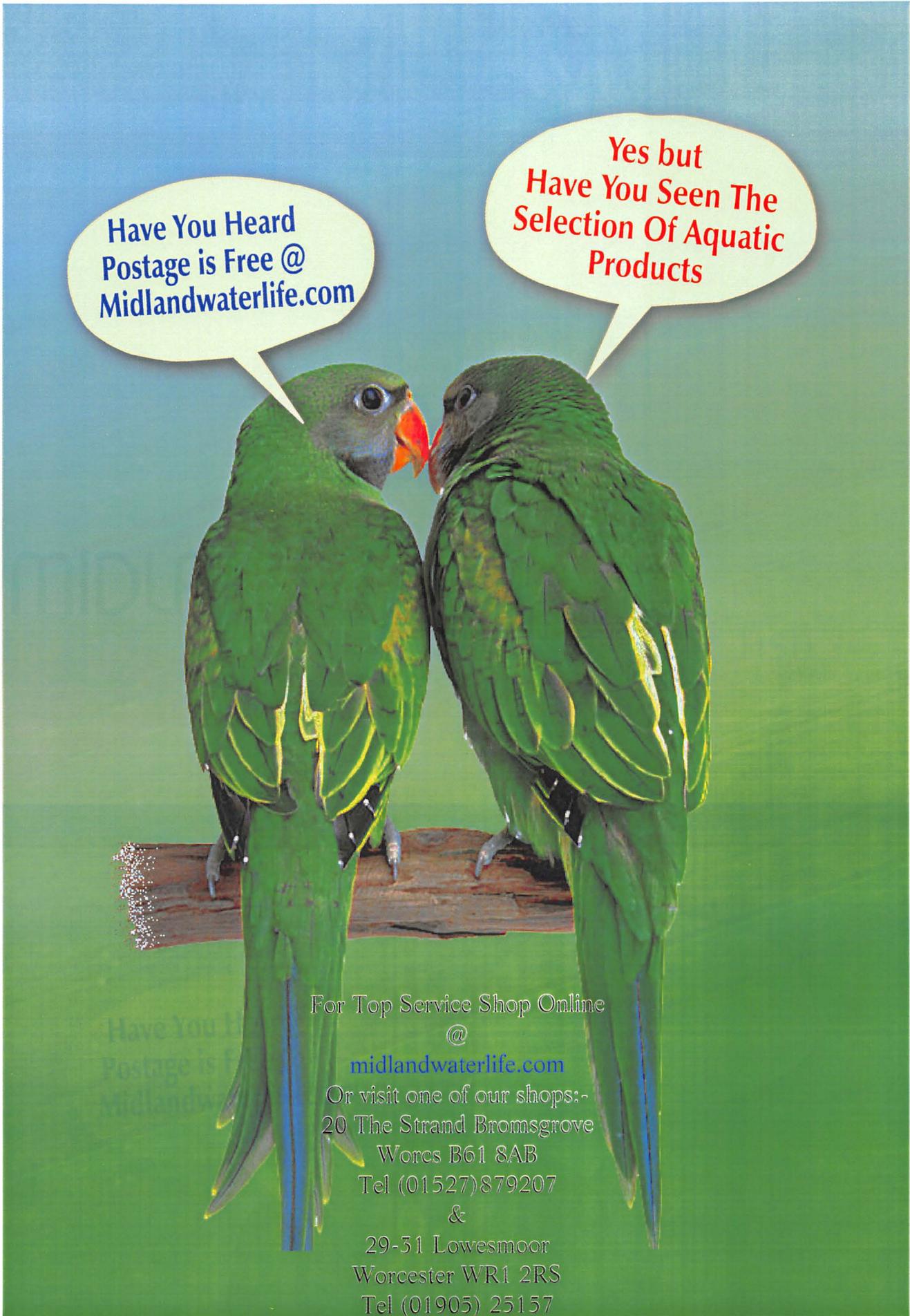
What really fascinated me was the speed that some of the responses can take place. Dr Hardman mentioned that *Clarias* catfish, for example, are spawned artificially for food in many parts of the world. Initially, the breeders were surprised by the fish becoming ripe within an hour of the hormone injections. Research on their spawning grounds showed that they spawn immediately the river breaks its banks and that takes only an hour when the rains come. Isn't Mother Nature wonderful?

2008 Dates for Your Diary

April 20th	BAP Reports & Discussion
May 18th	Perfect water
June 15th	Modes of reproduction
July 20th	Diversity in Catfishes
August 17th	Showing and Judging Catfish
September 21st	Open Show & Auction (35 Catfish classes)
October 19th	Plants for the Catfish aquarium
November 16th	Autumn Auction (Pre booking Roy Barton 01942 248130)
December 14th	Christmas meeting - not to be missed :-)

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Two green parrots are perched on a wooden branch, facing each other. The background is a gradient of blue and green. Two speech bubbles are positioned above them. The left bubble contains text in blue, and the right bubble contains text in red.

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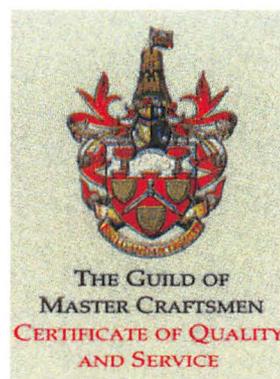
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