



FEDERATION OF BRITISH AQUATIC SOCIETIES

BULLETIN

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SUMMER 2009



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EDITORIAL

After the my 'first issue' had been published, I thought "This is a bit of a doddle" as all I have to do is collate articles sent to me, rustle up some pictures and send it all to the webmaster. However, I had been left quite a few articles by the previous Editor. Now it's down to me to seek items!

I'd love to hear from Clubs how they're coping with rising prices, falling membership and any other problems. Maybe you could answer a few of these questions:

How long have you been in fishkeeping – and what started you off?
Can you remember your first aquarium and what you kept in it?
What are your special interests? Are you into breeding?
Do you belong to a Society? What do you think about Shows?
If money was no object, what aspect of the hobby would you like to follow? What fish would you never keep – and why?
How do you think fishkeeping is keeping up with other modern interests? What keeps you interested?
What's next in your fishkeeping plans?

We'd be happy to reflect genuine Club life in these pages, so don't keep all your secrets to yourselves! Believe it or not, the addresses below actually are known to the Post Office, telephone and email providers – you know what to do next.

Look out for the exciting Star Fisheries Competition in this issue!
Our thanks to Andy Green for making this exciting development possible.

**Malcolm Goss, 25 The Gowers, Chestnut Lane, Amersham,
Buckinghamshire HP6 6ER**
tel: 01494 722786 e-mail: malcolmgoss@tiscali.co.uk



All most things in life need is the driving force or a good foundation.

The same might be said with fishkeeping, as once a hobbyists gets fixed on a particular area of interest there's no holding back.

For newcomers, what really ensures that they are 'hooked' (to borrow a slightly tenuous allusion) is when the fishes in their new aquarium not only appear to thrive but suddenly produce baby fishes. To the delight of the fishkeeper, this comes as confirmation that how they are keeping their fishes must be proceeding along the right lines, even though there may be some confusion (or even a mystery) as to how this miracle happened.

It is often joked about in aquarium Society circles "My fish bred, despite the way I keep them!"

Of course there are very high odds against any young fish surviving in a community collection unless deliberate steps are taken to prevent this from happening. Those young fish that do are not only lucky but may have certain advantages on their side to start with. Firstly, immediately they are born they can swim; then they have an instinct for self-preservation and head for the nearest sanctuary – usually a clump of floating plants.

With this description, there is only one group of fishes whose youngsters qualify for this death-avoiding, bravery award and that is the Livebearers.

All fish breed through the mechanism of a male fish fertilising eggs produced by the female. It is only what happens to the egg after fertilisation that separates the livebearing species from egg-laying species.

In the latter group, fertilisation occurs after the eggs are ejected from the female's body. The eggs then are left to their own devices in the main, although some fishes such as cichlids and labyrinth fishes perform very rigorous parental care both during the hatching period and after.

On the other hand, in livebearing fishes the fertilised eggs remains inside the female fish's body for about a month at the end of which the tiny fry emerge as fully-functioning miniatures of their parents. What could be better than have, say, a couple of hundred ready-made baby fish after a month with hardly any effort required on the fishkeeper's part? There has to be a snag somewhere along the line.

You might regard egg-laying species, using computer jargon, as WYSIWYG fish; that is, What You See (in the parent fish) Is What You Get (in baby fish terms). Unfortunately this is not always the case with livebearing fish.

We mustn't be too hard on livebearers for it is because of their willingness to breed (just try stopping them!) that they have provided such a great base on which to develop many brilliant colour varieties over the years. But, therein lurks the snag. These fish, and we're talking the Big Four here – Guppies, Swordtails, Platies and Mollies – are simply downright promiscuous on one hand and have a hidden secret on the other.

Not only are the males content to mate with whatever colour variety of female within their species group comes along, but the crafty ladies can also store sperm from a mating to fertilise further broods of young without re-mating with a male.

So, the next time you think you're putting one over the aquatic dealer by choosing an obviously gravid (pregnant) female from the display tank, just stop and ask yourself just who do you think the father might be out of all the differently coloured males that had access to your female fish before you bought her?

By now, it may be becoming apparent how difficult it might be not only to produce a particular colour strain of fish in the first place but also how to keep the strain pure from then on. Given the Mendelian Laws of genetics with all the possible permutations of colours likely to be produced, allowing for dominant and recessive colours, to say nothing of huge tank space required to grow on the young and then the heartbreaking selection processes involved to find the best fishes, you can see that it's not all as plain sailing as you might have thought.

But enough of possibilities and probabilities, what about the fishes themselves?

Livebearing fishes are generally divided into two distinct groups within the organised hobby. The Big Four, already mentioned, all conform to the familiar mating pattern. These fish may be described quite justifiably as 'Cultivated Livebearers' as the majority of varieties available have been developed in the aquarium rather than occurring naturally in the wild. The other group, rather dismissively described as 'Other Livebearers' are genuine wild stocks of different genera, although some of these are dwindling in numbers and many are dependent on hobbyists' breeding programmes for their continuing existence. The females of these fishes do not share the same sperm-storing faculty as their cultivated female relatives.



It is not for nothing that an alternative name for the Guppy, *Poecilia reticulata*, is the Millions Fish. Collected in numbers in Trinidad by Dr Robert John Lechmere Guppy in 1866, it began its taxonomic life in the genus *Lebistes* but was moved to *Poecilia* in 1963.

It is surprisingly fertile and male Guppies often give the impression of having a very one-track mind as they constantly harass any luckless female in the tank.



Since its introduction into the hobby around 1909, there has been an explosion of tail-fin shapes, patterning and colouration. To many long in the tooth fishkeepers, the eventual appearance of highly coloured females was quite a revelation, as these ladies had always been the dowdier of the two sexes.

The Swordtail, *Xiphophorus helleri*, and its near relatives the Platies, *Xiphophorus maculatus* and *X. variatus*, are the main 'cultivated' species in the genus. The name Platy comes from the abbreviation for *Platypoecilus*, the Platy's original scientific name. It was only later when evidence showed a clear connection to *Xiphophorus* that the name was altered to reflect this.

The Swordtail offers several accomplishments to the unaware hobbyist – it can swim backwards very competently and can also change sex (but only in one direction). The colour patterns achieved through selective breeding apply equally to both Swordtail and Platy and you will find identical strains in each – Hi-Fin, Red Eyed Reds, Wagtail, Berlin, Sunset, Marigold etc.

The Molly, primarily named *Mollienisia* after the Frenchman Mollien, has now also joined the ranks of *Poecilia* but nothing has changed to affect its appeal, especially newcomers when they are confronted by the jet-black of *P. sphenops*. The huge sail-like dorsal fins of *P. velifera* and *P. latipinna* only develop on those fishes given much room and warmth – in short, outdoors ponds in sunnier climes. Of course, the hand of Man has not passed this genus by and there are Green and Gold forms together with the quite unnatural looking 'balloon' varieties.

All the above genera make excellent aquarium fish and most are hardy enough to survive the teething troubles that novice fishkeepers usually encounter with their new aquarium. Providing they are treated with a varied diet, given suitably planted aquariums in which to live and, especially, in which to deliver their young, the Big Four supply a great foundation on which to build a great fishkeeping future.



TWO KIWIS FAR FROM HOME

Caryl and Grant Simpson, from Blenheim, New Zealand found time to have a meal with Dick Mills, Bob Esson and Pete Cottle during their recent UK visit. Caryl edits the FNZAS Aquarium World magazine and at last caught up with her exchangees over here.



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'WATER, WATER, EVERYWHERE, NOR ANY DROP TO DRINK'



Fish are indeed surrounded by water and, with the exception of marine species, drink very little of it. Water is the fishes' environment – they swim in it, live, breed and die in it – so it is essential that its quality is sustained, if the fish are to thrive.

As far as we are concerned, water is a commodity that comes out of the tap at the turn of a handle or lever. It's colourless, odourless and can be used for a multitude of purposes from drinking to washing the car! None of its mysterious properties (more of which later) are of any interest to us and if we're honest with ourselves, we take it very much for granted. The only times we get vociferous about water are when there is a shortage in summer or a surplus from the sky – usually in summer too.

Before we start to appreciate just what water means to the fish, it should be understood that water is not the same the world over even though it has a worldwide common origination – the sea.

Thanks to evaporation and condensation, water arrives on land without us having to go and get it. But how it arrives and where it arrives has a great determination on its final make-up.

Falling through the atmosphere is the first opportunity water gets to become contaminated or affected; then it depends, too, on what type of surface it eventually lands on.



Hard impervious surfaces won't have much effect and the water runs off like, well, water off a duck's back; on more absorbent materials it soaks through and again picks up 'contaminants' on the way. In forested areas, collecting water will pick up more pollutants from any decaying vegetation laying in its path.

Water is also affected by movement (or lack of it). Fast-flowing mountain streams are well-oxygenated, and not likely to pick up too many pollutants as they crash down hillsides.

Shallow stationary jungle pools containing lots of rotting leaves etc are likely to be oxygen-depleted.

OK, stop right there. You can probably name quite a few fish species which come from all of these environments so described – and you expect then to live happily in whatever comes out of your tap? You need to know a bit more about water if you're to treat your fish as they deserve.

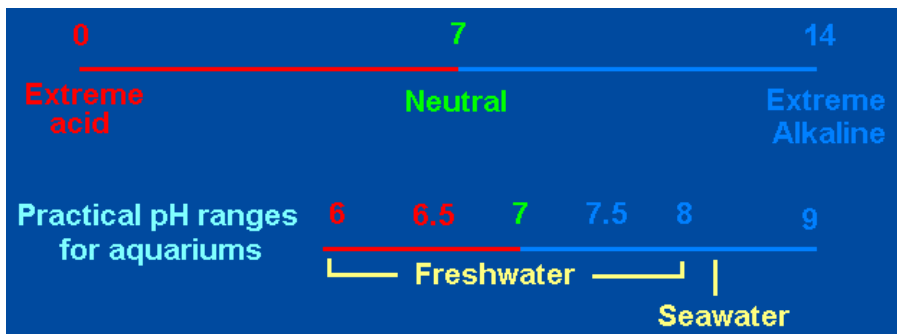
Most people will be familiar with the concept of 'hard' or 'soft' water. Soap lathers more easily in soft water and one tea manufacturer actually produces a tea specifically for hard water areas.

Fish will also know the difference too. In nature, their homes may be in the soft waters of the mountain stream or in the far harder waters of the great African Rift Lakes. Therefore it is best to know what your fishes require in the way of hard/soft water before you get them. It's not just a question of reading up where the fish come from, but rather in what type of water they are acclimatised to when you buy them. The subtle difference is that a major proportion of fishes for sale are captive bred and not caught from the wild, so always go for what the fishes are actually living in rather than what they *theoretically* need.

A rough guide shows that most egglayers such as Tetras, Barbs and Rasboras like softer water whilst Livebearers and Mid-American and African Lake Cichlids like it hard.

The other water quality to take into consideration is whether it's acid or alkaline.

Just as fish won't take too kindly to being exposed to wide differences in hardness, they can also become stressed if too sudden, or too great, a change is made on the acidity/alkalinity front.



The unit by which this particular water quality is measured is known as pH. The complete pH scale ranges from 0 (most acid) to 14 (most alkaline) but the range that most concerns fish lies between, say, 6.00 to 8.00 which, as you can see, straddles the halfway value of 7 (neither acid nor alkaline).

Domestic tap water generally has a pH value of around 7.5 or more so it appears to be quite suitable for most fish's needs. Naturally, there will always be the exceptions, although it may not be until the fishkeeper takes up breeding that extra attention to water quality is really necessary



Measuring these two parameters of water quality is not difficult as there are many accurate Test Kits on the market. These range from inexpensive liquid/tablet reagents up to highly-sophisticated electronic measuring devices that come with a price tag to match.

The problem comes when, having found out the quality of your water, you want to keep it stable or, alternatively, to change it.

Again, there are many additives for altering acidity/alkalinity and devices to remove or add hardness. Whatever route you decide to take, you must remember to make all changes extremely small and, preferably, over a fairly lengthy period in order not to stress the fish.

It's a pretty sure bet that most fishkeepers top up their tanks every time that see that gap appearing above the water level but below the aquarium trim. This is great for restoring the 'full picture' but not if you don't couple this with a partial water change. As water evaporates, only the H₂O part is lost – any salts, minerals, nitrates etc dissolved in the water are still there and topping up only adds to the total amount of dissolved solids.

Most algae problems, once a correct duration of lighting and full complement of plants has been achieved, is most likely to be due to nitrates and phosphates in the water whose levels can be controlled by water changes and by the use of the appropriate removal agents used in conjunction with a filter.

Regular partial water changes are probably the most important, albeit most basic, maintenance task that really contributes to success in the aquarium whether it be actual water quality or overall condition of the fishes.

Don't become a slave to softness/hardness or pH numbers. Watch your fish instead. A short parable: A visitor to Hampton Court Palace Flower Show told an advisory service that he had a problem with pH. After discovering that all his fish were happy and healthy, the diagnosis was "Yes, you've got a problem with pH, but your fish haven't."



FILTRATION BY DESIGN BY LES HOLLIDAY

These days aquarium keeping is becoming far more high tech than in the past.

This is perhaps not surprising as many of the major aquarium equipment manufacturing companies are strongly committed towards continuous attention to improvement to ensure their aquatic products represent the latest design and technology and incorporate technically advanced innovations to deliver the highest quality products on the market.

There is no better example of the truth of this statement than in aquarium filtration. A strong emphasis in developing aquarium technology has always been directed towards finding means of improving water quality. Achieving high efficiency in filtration allows aquariums to be healthy places to keep fish and other aquatic subjects and provides conditions to allow a wider range of life forms including many sensitive subjects once considered impossible to keep in aquarium conditions to succeed.

Out at the forefront of developments in aquarium filtration technology is Rolf C. Hagen Ltd. Their Fluval series of products, which includes a highly comprehensive range of filters, filter media and accessories, all of which have been subject to rigorous development and field testing during a refining process which has extended over more than twenty five years.

Top of the range in the Fluval series of filters are Hagen's well known canister filters and associated products. The 05 range with 4 models is appropriate for aquariums ranging from 100-ltrs/22 gal up to 400-ltrs/88 gal.



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Excellent designed both for looks and purpose these popular canister filter models offer Fluval's multistage filtration system which utilises the entire canister volume with optimum water flow efficiency and highly versatile multiple media ability. The initial mechanical filter stage features twin foam pre-filters to maintain efficient flow and reduce maintenance. The chemical and biological stages which follow are housed in independent modules. This means you can change media independently leaving areas housing nitrifying bacteria undisturbed whilst replacing media such as activated carbon, phosphate removing compounds and ammonia remover which require more frequent replacing, easily accessible.

Versatility is the byword which best describes the Fluval 05 canister filter range as it is soon clear that there is an extensive choice available from the comprehensive array of Fluval media when choosing the contents for the roomy modules of each of the four 05 models. A highly comprehensive range of different forms of media has been developed precisely to best exploit the ability of these incredibly adaptable filters. For mechanical filtration it's possible to choose from filter foam which traps large particles and debris and water polishing pads for removing fine particles. Any type of coarse aggregate material can be used as a biological media but Fluval BioMax, a preformed ceramic biological media, is far superior in forming a host to large colonies of beneficial bacterial.



Developments in chemical filtration have advanced a great deal and Fluval offers a wide range of chemical filtration products both from its standard range and more recently from the Fluval Lab Series.

The standard range includes products which target specific pollutants like Green X and Clearmax which trap phosphate, nitrite and nitrate and Fluval Ammonia Remover to reduce ammonia.

Pure activated carbon is also available as Fluval Carbon or mixed with Ammonia Remover and marketed as Zeo-Carb. Activated carbon has amazing properties as an adsorber and will remove a wide range of pollutants from the water column whilst also eliminating odours and discolorations.



The Fluval Lab Series has been developed after years of research and development and has resulted in 3 of the most powerful professional media Hagen have ever produced. Fluval Lab Series Phosphate Remover is highly successful in dramatically reducing phosphate in just hours. Based upon Ferric Oxide it has unsurpassed phosphate (P_0_4) binding power and can adsorb up to 40 times its own weight of phosphate. This product can also reduce silicate (SiO_2) plus some heavy metals and dissolved organics. Even very small concentrations of phosphate can encourage algae growth in closed system aquariums and positive tests have shown that algae growth is visibly reduced using this excellent product.

Fluval Lab Series Opti Carb is based upon a powerful adsorbent material which will remove toxic compounds such as copper, lead and other heavy metals and is also highly effective in removing many types of organic compounds like, for example, phenols which cause discoloration of the water. Whilst activated carbon is a major ingredient, this product also contains a range of adsorbent ion exchange resins designed to have specific exchange characteristics and are targeted to reduce specific impurities. For those wishing to maintain the highest standards of water quality in aquaria this is the product to ensure this.

The third product in the Lab Series has also been developed with the serious aquarist in mind. Lab Series Nitrate Remover is the most effective nitrate remover available at present and uses pure high-grade ion exchange resins. In laboratory tests this product reduced nitrate levels of 55 mg/1 down to 3mg/1 over an 8-hour period and within the first two hours nitrate had dropped to around the 10mg/1 level. These kind of amazing results can be repeated several times by recharging the resin using iodine free aquarium salt. For the present, although Lab Series Phosphate Remover and Opti Carb have been developed for both freshwater and marine use the resins in Nitrate Remover are only effective in freshwater aquariums.

In the past, the demand for very high levels of water quality when keeping very sensitive freshwater subjects and the corals and fish maintained in large reef aquariums was difficult to meet with standard canister filter equipment.



Now, however, the Fluval FX5 professional and extremely powerful canister filter has been developed which can be used to give hitherto unobtainable, highly impressive results for aquariums up to 1500 ltr/330g.

Winner of Practical Fishkeeping's readers award for Best Freshwater Product 3 years running, this high capacity filter features Smart Pump technology, which is designed for reliable filtration in a finely adjusted aquarium environment.

Equipped with a microchip which permanently monitors the pump, the speed and efficiency of the magnetic impeller are constantly monitored in order to guarantee a powerful water flow and highest energy efficiency. The roomy interior provides ample room for large quantities of media and allows 3 stage mechanical filtration plus 3 additional media compartments for flexibility and multiple filter arrangements.



Richard Hinchliffe, an advance reef hobbyist, gladly endorses the FX5 which he uses to filter a 270 ltr/60g reef aquarium containing a dazzling array of hard corals and reef fish. He is especially impressed with how simple it is to achieve high levels of water quality using this filter.



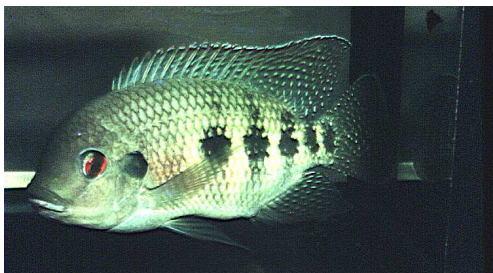
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FANCY A QUICK DANISH?

*BUT NOT FOR
CATFISH-LOVERS!*

It was a couple of years ago now that when my son was with his family holidaying in the USA and whilst staying in Dallas they went to a restaurant that only cooked catfish - the North American fish from the family Ictaluridae. In fact they brought me back their menu but I seemed to have mislaid it.



It was only last summer that Dick Mills, Peter Anderson and myself along with our wives went to a restaurant in Little Chalfont, Buckinghamshire and on the menu was "fillets of Tilapia."

I remember Peter and myself ordering them. When served up to us, the fish was white in colour looking very much like fillets of sea-bass and they tasted really nice, both Peter and I are looking forward to ordering it again.

Just recently I visited my son in Denmark and white fish like Cod or Haddock are not seen in their Supermarkets.



However I picked out what looked just normal fish (that is in England) and looking on the label it was marked fillets of *Pangasius* !

Recipe:

**Baked Pangasius fillets with, Avocado, Prawns,
Cream and Cheese
(Alternative fish: Cod or Haddock)**

Pre-heat the oven to 220°C.

Rub baking dish with a little olive oil.

Season fish fillets and place in a baking dish.

Peel, remove stone and slice Avocado, and place over the fish.

Spread small cooked prawns on top of the fish and drizzle over everything with double cream. (That makes the sauce)

Cook in hot oven for 15/20 minutes.

Accompaniment: Spring onions, sweet peas, white wine and spinach.

Finely chop Spring onions, warm up a saucepan and add a knob of butter with a splash of Olive oil.

Add the Spring onions and fry for 2 minutes.

Add frozen peas and cook for a little longer, add white wine just to cover peas, bring to the boil and simmer till peas are cooked.

Add two large handfuls of fresh spinach and keep turning over till spinach is wilted. Add huge knob of butter, season to taste and serve.

Ref: Jamie Oliver (Return of the Naked Chief) Published 2000.

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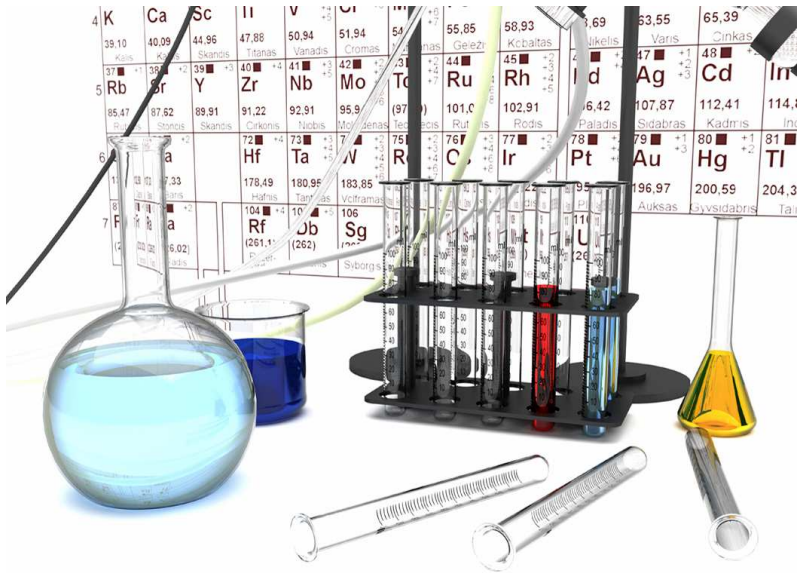


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Getting the **MOST** out of your test kits

Dave Hulse, Tetra Information Centre

One of the oldest sayings in fish keeping circles is to 'look after the water and the fish will look after themselves'.

This is every bit as true today, even with the latest aquarium or pond technology, we still need to know the condition of the water. If the water quality meets the environmental requirements of the fish, then most of the time the fish are just fine.

A facility to test the quality of the water for the fish is thus absolutely vital. On even the most basic of fish keeping systems the fish keeper will need to know how the actual chemistry of the water relates to the water chemistry the fish would like. A fish is simply a permeable bag of fluid swimming around in the water. If there is any pollution in the tank or pond or the pH is incorrect, then this pollution or incorrect pH will be conferred onto the fish.

What is water quality?

When we talk of water quality, we mean the parameters of the water and the pollution content. The water's parameters are properties that describe the water's composition, its pH, hardness level, salinity, temperature or oxygen content.

The water's parameters need to be related to the environmental requirements of the fish being kept. For example, aquarium Discus fish need to be kept in warm, soft, acid water, goldfish prefer temperate, neutral, medium hard water. Put either fish in the wrong tank and they become very poorly very quickly.

The pollution content of the water describes the concentration of chemicals that are the result of the excretion of waste by the fish, plants, filter bacteria and countless other living things in the water. This then includes the big three nitrogenous compounds, ammonia, nitrite and nitrate, and also phosphate. The pollution content also encompasses other chemicals that may enter the aquarium or pond through mismanagement or error. For example, calciferous minerals leaching into the aquarium through the use of inappropriate rockwork or into ponds through water contact with unsealed concrete.

Aquarium / Pond water pH and tapwater pH

When testing for water pollutants such as ammonia or nitrite, we need to know the absolute result and strive for a zero reading. When testing pH and hardness, we want to know how these parameters have deviated from the supply water. If the aquarium or pond is fed by tapwater, then the pH and hardness should be the same as that of the tapwater. Over time, both pH and hardness will usually decrease, the greater the decrease the 'older' the water and the more desperate the need for a water change or addition of pH / hardness replenisher. In a minority of aquaria, water is either softened by passing through a reverse osmosis unit, or the water is hardened, through the addition of alkaline calciferous minerals.

So let's summarise so far, water quality parameters describe the composition of the water and pollution describes the natural waste levels in the water. We must relate both to the environmental requirements of our fish. Pondkeepers are in a fortunate situation, the fish they keep all have identical environmental requirements as follows:

.pH: 6.5 – 8.0 – The value must be stable,
(not fluctuate more than 0.2 pH units a day)
GH: 5°dH - 15°dH
Temperature: 4°C to 30°C – the value must be stable,
(not fluctuate by >1°C per day)
Oxygen: >70 % saturation
Ammonia: – zero
Nitrite: – zero
Nitrate: – <100 mg/l as NO₃ (22.7 mg/l as NO₃-N)

Zero vs ‘undetectable’

We strive for ‘zero’ ammonia or nitrite in our koi ponds, but there will always be tiny a tiny amount of each, just enough for the biofilter bacteria to feed on as they process the waste of the fish. Thus when we say ‘zero’ levels of ammonia, what we really mean is a level of ammonia ‘undetectable by the test kit’.

Aquarium fishkeepers must be aware of a bewildering array of water preferences of tropical freshwater fishes, for tropical marine fishes, the environmental requirements are uniform.

Types of test kits



There are many types of test kits available to the fish keeper. From simple dipstick tests to complex expensive electronic probes, the most widely available are liquid chemical or tablet chemical test kits.

Here a measured amount of reagent is added to a sample of aquarium or pondwater and the result compared to a known standard. There are two types of chemical test that test kits use. The most common type is a colorimetric test, where the reagent added forms a coloured complex with the compound being tested. Thus greater the colour intensity the greater concentration of the compound being tested.

The other type of chemistry test used in water test kits is the titration. Here a known quantity of reagent is added dropwise to the water sample until a colour change is observed.

Dipstick tests are useful as they are very quick to use. They can give a quick snapshot of the water quality in a pond. However they are not accurate enough to test the water if a problem is to be diagnosed. Use them to check your aquarium or pond water quality is still okay; do not use them if you suspect a problem.

Electronic probes are the hi-tech approach to water quality monitoring. Handheld units to measure most parameters can be purchased from larger aquatic stores. These probes are very accurate providing the user has calibrated them correctly. Calibration of these probes can be rather laborious, but a precise digital reading is given for a value instead of having to determine colour intensity against a colour scale. The massive advantage that some electronic probes have however is the ability to link them to a PC data logging facility so that water quality can be recorded and trends observed.

Management of test kits

Once you have purchased your chemical test kits it is vital to store and use them correctly to ensure that they give you a correct reading. False positive readings can send you into a wild panic for no reason whereas false negatives are very dangerous for your fish.

Manufacturers formulate their test kits to be stable and not loose accuracy overtime. However the chemicals in the kit will eventually degrade rendering the kit ineffective. Once the liquid reagent bottles are opened, then the degradation of the chemical speeds up. Thus if you find an old battered ammonia test kit at the back of the cupboard, it is best not to use it. Ideally try to buy new chemical test kits every 8 months. They should be being used weekly, and you should run out well before then anyway!

Storage of test kits is also vital. They should not be left outside next to the pond! Store kits in a dry, cool place, well out of reach of children. Each reagent should be kept in its relevant packaging with instructions and colour scales to hand.

Getting the most out of your test kits

Before any water testing can be done a sample must be taken. Ideally take one large sample that can be carried away from the aquarium or pond and then dispensed into test tubes for analysis. (I have seen many test kit reagent bottles or tablets fall into the water with the fish – whoops!). When sampling ponds, take water from the middle as occasionally stagnant pockets may be found at the edges. I find a cleaned coffee jar tied to a bamboo cane does the trick.

Dispense the required amount of water into a test tube that has been cleaned in the pond water to be tested. Ensure you add the correct amount of water and make sure the bottom of the water line lies at the specified mark on the test tube.

Before running the test carefully read the instructions, make sure you have all reagents to hand, and a stopwatch handy. Many kits take time for the reaction to proceed, and in cold pond water this can take a long time. Some manufacturers kits require the sample water to be at room temperature.

When using tablet test kits break the tablet package over the test tube so the tablet falls straight into the sample. Do not touch the tablet, as not only will it start to dissolve in your hand, thus losing vital reagent, but also there may be health and safety risks.

With dipstick tests, avoid touching the reagent-impregnated pads on the stick for the same reason. Also, as soon as the dipstick comes out of the water, shake it vigorously, to prevent water pooling on the stick and reagents can then contaminate adjacent pads, giving erroneous readings.

When using liquid test kit reagents it is vital to hold the bottle absolutely vertically above the test tube. This way the correct size of drop is formed and thus the correct amount of reagent added. Always add the required number of drops (unless performing a titration).

When using colormetric kits ensure the test tube is held against a white background when you attempt to ascertain a value, also where possible interpret the colours in natural light.

With ammonia, nitrite or nitrate test kits it can sometimes be rather hard to 'zero' the kit, in other words what does 'zero' ammonia look like? If you test a bottle of deionised water, (available from most DIY or car accessory stores), in comparison to your pond water, then a true zero reading can be observed.

Finally, once you have taken your sample, performed the analysis, cleaned up and put your test kits away, it is vital to record the results you have just taken. This way trends can be observed. For example, you may remember last weeks result, but what was the pH value a month ago? How does this ammonia reading compare to this time last spring? Aquarists managing fish displays at zoos and public aquaria across Europe have to perform weekly water chemistry tests on their exhibits and show detailed records of the results.

Test kits are the most vital part of the fishkeepers tool bag. They are manufactured to a high specification and can give results that are perfectly accurate for our purposes. However errors can creep into the process if the kits are not stored, used and managed properly. Test kits enable us to monitor and look after water quality, that way the fish can look after themselves.

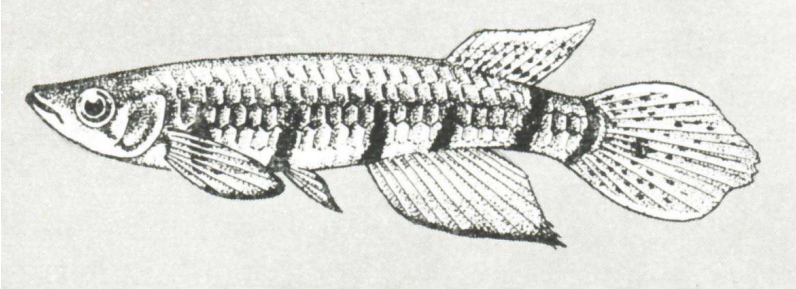


Visit Tetra at www.tetra-fish.com

WHITE PAPER

by

Ethelwynne Trewavas



Epiplatys sexfasciatus

This proved to be one of the most abundant species in the Kumba area and is one of the three non-endemic fishes in Barombi Mlo, West Cameroon, Africa. Here it is common around the edge of the lake and in both inflowing and out flowing streams. This fish was not caught in Lake Kotto itself nor in Mboandong, only specimens from this area being two females, one caught by hand-net in rung Nsuria, a stream entering Kotto from within the crater, the other from R. Nyoke.

The male is richly-coloured. The flanks are green, counter shaded to dark green on the black and yellowish below. Each scale of the upper half of the body carries a red-purple spot.

The dorsal fin has a black band within a narrow white margin and there is some black on the posterior rays; the centre of the fin is yellow with red spots.

The bluntly pointed or rounded caudal has a black marginal band above and below with a yellow band that reaches the edge on the middle rays and bears red spots with streaks in its upper body; the middle and proximal part of the fin is greenish with darker rays.

Both anal and pelvic fins have black marginal and yellow sub marginal bands; the proximal part of the anal is like the middle of the caudal.

The head is dark with a gold spot on the occiput, the throat pale with a dark streak parallel to the lower jaw behind its edge.

There are six to nine near-vertical dark stripes on the lower half of the body, the first behind the pectoral base, the last extending right across the base of the caudal. Stripes additional to the basic six are frequently shorter or narrower than the others.

The female is paler to watery buff: Dorsal and caudal fins are watery green with faint crimson spots, the other fins are colourless. In some females the vertical bars are seen shorter than males' and may well disappear altogether.

Males collected reached a length of 65mm, females 55.5mm.

One of the females contained transparent spherical eggs 1 mm in diameter with one or more transparent globules within them. According to Scheel, ripe eggs are bigger 1.4 1.6mm.

The type locality of *E. sexfasciatus* is a queried Gaboon River (Gill 1862) and its distribution extends in coastal areas from the Congo to the Tongo Hills. (Scheel 1968).

1970 Radda collecting near Kumba named the population *E. sexfasciatus rathkei* and Loisel in 1971 describes the most western population as *E. s. togolensis*. Radda distinguished *E. s. rathkei* by its rich colouring and by the higher number of vertical black bars, usually 8-10, but did not compare with population collected from the Gaboon River, the presumed type location. I have seen only two preserved specimens from the Gaboon River and they have only six bars black bars, but so have many specimens collected from Barombi Mbo and the Mungo.

1971 Scheel merged *Epiplatys* with *Aplocheilichthys* McClelland, but until the evidence is given I use the name under which this species is well known.

Ref: The Freshwater Fishes of Rivers Mungo and Meme and Lakes Kotto, Mboandong and Soden, West Cameroon. Vol. 26 No.5. The British Museum (Natural History) Zoology London 1974. E. Trewavas.

Note: The above white paper is a shorten version of Ethelwynne Trewavas work edited by M. L. Goss the full and original work can be found at the newly named, Natural History Museum, Cromwell Road, South Kensington. London

Hold my hand, I'm traumatised!!

Clive Walford asks "Who says fish don't show feelings?"

For about a year, (give or take a few months!), our favourite fish have been kept in the spare bedroom. Visits were mostly just at feeding time and maintenance visits!

The 2 Clown Botia, 2 Featherfin Catfish and a Ghost Knifefish lived quite happily together in their 60cm aquarium. They certainly have more "character" than the fish in the community, or Malawi cichlid, aquariums and feeding time was a good excuse for spending a half hour or so laying on the spare bed watching them feed. To see them all swimming upside down taking the floating flakes was quite amusing. They all kept out of the limelight at other times and "hide and seek" is their favourite pastime!

The 2 Featherfins generally kept apart and if they did come into contact they would give each other a little bit of hassle and then go their separate ways! Those two would sometimes sit on the bottom close to the front glass and "eyeball" me without being nervous of my presence. The Clowns would generally play dead behind the filter!



At last I got round to having a cabinet made for them so they could be moved into the lounge where they would be more visible (theoretically!).

(The cabinet would also house my owl ornaments that also had been relegated to the bedroom!)

The new cabinet, complete with fish and owls! I added some lights, and the total cost was about £55.

Moving them was a bit tricky but by using a plastic bowl we were able to catch them without getting any whiskers damaged! Some water was transferred to a container and then the fish caught. The remaining water, bogwood, stone and gravel were removed and the aquarium cleaned and then reset up on the new cabinet. Once all was well the fish were transferred to their new location. The Clowns and Knifefish soon settled down. However the Featherfins were really traumatised!



They huddled together close to the bogwood and were constantly touching each other with their fins or heads! If one moved away, the other would quickly follow and make body contact before settling down “hand in hand” (OK, a bit of poetic license here!) Certainly the expression in the eyes was different to that prior to the move!

There is no doubt in my mind that they certainly were comforting each other and looking for reassurance from their usually “keep your distance” mate.

**“Come on don’t be fright.
Here, hold my hand if you’re nervous!”**

(I had seen similar behaviour between 2 Red-finned Sharks. Normally they were quite aggressive to each other but when one was dying and just floating about the other one would very gently nudge it until it made an effort to swim. There was no aggression in the nudging at all)

It took a couple of days before the Featherfins fully got back to their normal behaviour pattern. Of course we still don’t see too much of them as they still like to remain out of the limelight! Once more I am certain that fish have a lot more feelings than we credit them with.

The tale of the aggressive, but gentle Red-finned Shark

One of my Red-finned Sharks became very sick. In the morning it had been swimming around looking very fit and enjoying life. Later in the afternoon it was seen to be lying on its side and struggling to move about. There appeared to be a small swelling in what I can only describe as the “chest” area. It managed to move about a little but always on the bottom. The other Red-fin, whether it was the previously aggressive one of the pair or the other I cannot tell, kept coming to the dying fish and very gently nudged it with its head, not with the mouth. When the dying fish got off the bottom, the other one nudged it up to the surface and tried to keep it there. I was very surprised to see this caring behaviour from the partner of the dying fish.

Perhaps we under estimate the feelings of fish in general. After a few hours the fish was dead and the other one kept coming back to nudge it. It made no attempt to eat it at all. (It is usually the first to make a meal out of a dead body!)

I was disappointed at the loss of this particular fish as I had hopes that in the future I could have tried to breed from what certainly, from their previous behaviour, appeared to be a possible breeding pair.

DID YOU KNOW?

The oceans are the most stable environment on earth. 77% of the world's surface is covered by water, but only 2% of that is fresh water.

The Splashing Tetra, *Copeina arnoldi*, actually lays its eggs out of water to protect them from predators.

The Salmon, Eel and Sturgeon can all move between salt- and fresh-water without too much trouble, but only the Sturgeon can do it repeatedly.

The Neon Tetra, *Paracheirodon innesi*, has just as many teeth as the Piranha, *Serrasalmus nattereri*.

The herbivorous ‘Plec’ catfish, *Hypostomus plecostomus*, can control the amount of light entering the eye by an adjustable lobe of skin over its eye.

Star Fisheries



AMAZING FANCY GOLDFISH

The Star Fisheries story continues.

As you may well know by now, we are delighted to be associated with the FBAS and will be sponsoring the Goldfish Society of Great Britain Open Show at this year's Festival of Fishkeeping.



In the meantime, we are working hard on two distinct fronts: developing our new site in Lingfield, Surrey is the first priority. The other, is maintaining a good selection of high-quality Fancy Goldfish for our customers. Very often, one gets in the way of the other – but that's our problem not yours!

The vast array of Fancy Goldfish on offer has left most people amazed at the quality, selection and condition of our fish.



Shipments of Fancy Goldfish from China have been on sale since the middle of March.



The fish we selected out last year have grown on and over-wintered well, as many fish selected showed great potential. I am sure that you will be suitably impressed with probably the largest selection of Fancy Goldfish in Europe, all under one roof.

Star Fisheries

in the grounds of Occasionally Yours Nursery,
Lingfield Common Road,
Lingfield, Surrey RH7 6BZ.

Tel No: 0208 643 6162 Mobile: 07973 332970

email: andv.green@starfisheries.co.uk

Website: www.fancygoldfish.org



The Peacock Goby

Tateurndina ocellicauda

by Ian Pitts, Dunstable & District Aquarist Society

The Peacock Goby is a small fish from Papua New Guinea. It has colours to rival some of the brightest Killifish, purple, red, blue and yellow, and is easy to keep and breed.

Sexing is easy in fish which are 1" or larger, the male having a distinctly rounded head, longer finnage, and an absence of black markings on his fins, whereas the female has a tapered head, a plumper stomach and usually, a black edge to her anal fin. As the female comes into breeding condition her bulging stomach area becomes brighter yellow, and is displayed to the male by bending her head and tail away from him, in a manner similar to that employed by female "Kribensis".

These fish do not appear to be too fussy about water conditions, breeding in soft, slightly acid, to hard and alkaline water. They do however show a marked preference for live foods, ignoring flake or pellets. Some frozen foods are taken, notably, bloodworms.

For breeding, I place a pair in an 18"x10"x10" aquarium, pH 7.2, temperature 78° F. The substrate consists of about 2" of fine gravel over an undergravel filter.

Cover is supplied by small flowerpots and pieces of slate, with a few clumps of Java Moss to complete the set-up.

The male is about 1½", the female slightly smaller. To condition the fish they are fed live foods, mainly bloodworms. Within a couple of days of their introduction the male will establish which is his flowerpot, and rushes out to display to the female if she happens to get close.

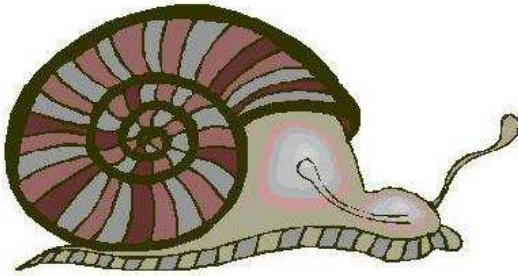
When ready to spawn, the female responds to the males display with one of her own. The male now tries to entice her into his 'cave' by fluttering and spreading his fins in front of her, and then darting into the flowerpot. Eventually she follows him in. The following day the female is out and about again, noticeably thinner and duller. The male will not be lured out even when live food is offered. At this point I remove the female.



Eight to ten days later, the first free swimming fry are evident, but still no male! He will appear only after all the eggs have hatched, and pays little or no attention to the fifty or so fry which are now swimming about the tank, but will take any bloodworms that are offered. To prevent temptation I now take the male out. The fry grow quickly on a diet of brine shrimp nauplii, and newly hatched mosquito larvae, reaching about ½" after 4 to 5 weeks.

Visit Dunstable & D.A.S. at www.ddas.co.uk

THE LIFE OF BRIAN



Brian, you may remember was the philosophical Snail from the Magic Roundabout, an altogether likeable character. Fishkeepers are, on the other hand, not entirely united in their appreciation of aquatic molluscs.

Snails belong to the scientific Phylum Mollusca, Class Gastropoda and can be found in both terrestrial and aquatic environments - most shallow freshwater habitats including ponds, lakes, creeks, rivers, and seas. Their Class name is derived from two words *gastro-* meaning stomach and *poda* meaning foot - a snail literally walks on its stomach and judging by numbers of them found under some circumstances the analogy to an army is not unjustified. But have they a place in the aquarium or pond?

Popular, snail-justifying reasons given for their inclusion include algae-eating, scavenging excess food, consuming decaying materials and general tank-cleaning. Some species, such as the Malayan Snails help to keep the substrate aerated and turned-over through their constant burrowing actions.

Against this, snails do a lot of damage to aquatic plants and if they multiply too rapidly may cause extra problems should there be a massive die-off. On the whole, many fishkeepers feel that snails' disadvantages outweigh their usefulness, bearing in mind they may also eat fish eggs and tiny fry and, of course, add even more waste products into the system. Some snails, too, may bring in parasites which may transfer to fish. Snails can block up airlifts and crawl into power heads and reduce their performance.

There are probably three types of snail familiar to freshwater fishkeepers - the round 'Ramshorn' species, the conical Malayan Snail and the Apple Snail. Marine fishkeepers will be aware of the Turbo snail often offered as part of the 'clean up gang' in association with Hermit Crabs

The Ramshorn



The round, flattened coiled shell is usually a reddish brown and these snails are often sold as attractive additions to the aquarium.

Whilst some may be thought to be the Great Ramshorn Snail, *Planorbis corneus*, it is more likely that the smaller species are tropical species from Brazil, *Helisoma nigricans*.

Egg-laying snails are generally thought to be hermaphrodites, containing both male and female organs although they do not reproduce by using these two organs simultaneously but must meet with the necessary opposing gender carried by another snail.

The Malayan Burrowing Snail



This livebearing snail, *Melanoides tuberculata*, and can reproduce at quite an alarming rate leaving the tank almost with more tiny snails than grains of gravel!

Its constantly burrowing activity ensures the substrate never packs down and this action would benefit any aquarium fitted with an undergravel filtration system. Having said that, these snails are amongst the hardest to get rid of, some people report that even boiling the gravel doesn't work!

The Apple Snail

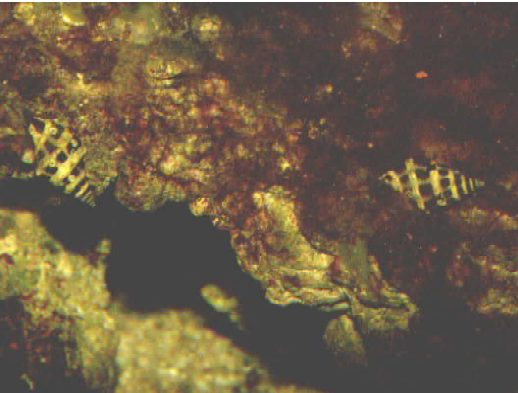


The genus *Ampullaria* (now possibly *Pomacea*) contains large snails - the small apple-size analogy is not too far off - and they can be said to have a positive use for the fishkeeper. These vegetable-matter consumers, especially *A. gigas*, produce copious wastes rich in infusoria which comes in handy for feeding to young fry.

Apple Snails should be cultured in their own tank and the infusoria-rich water used as necessary. In spite of the fact that many snail species are hermaphrodite (being male and female at the same time) Apple snails are definitely not: a male and a female are needed for reproduction. Very often, the snails will climb up out of the water and lay bunches of pink eggs, in grape-like clusters on the cover-glass or under the 'shelves' supporting the hood. The eggs hatch in 10-14 days and the small snails fall into the water. Growth is rapid and breeding is possible within a few months.

Incidentally, the variously-coloured Mystery Snails seen for sale are also of this genus. The Gold Mystery Snail, *A.canaliculata*, is reported to be less of a vegetable consumer and will thrive on fish foods.

Turbo Snail



In the marine aquarium, 'clean-up gangs' keep down algal growth and scavenge uneaten food. The *Turbo* Snail (that's its generic name rather than its feeding rate!) has an attractive green and black coiled shell. It feeds mainly at night and does a good job of eating algae; unfortunately, its relatively large size also means it can dislodge rocks if they are not firmly sited.

Controlling Snail Populations

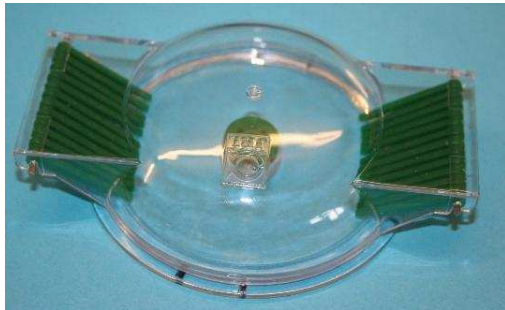
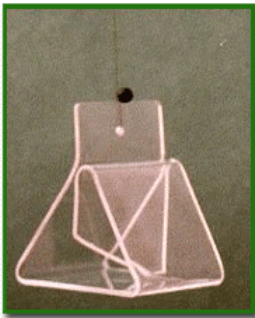


There comes a time when enough is enough and something has to be done to limit, or even eradicate, the snails. There are many apparently successful, tried-and-tested methods to achieve this aim.



The best method is to avoid introducing them in the first place. Snails are usually brought into the aquarium as eggs, on the underside of plant leaves. Check all plants routinely for these unless you want to reap the snail harvest in the future! Rinsing any new plants in a disinfecting solution of potassium permanganate or alum is often recommended. Of course, in outdoor ponds, any visiting frog or bird can bring in snails too.

Several species of fish can actively help in keeping the snail population within limits. Loaches, Pufferfish, Cichlids, Gouramies, Fighters are recognised as being helpful. All fish will eat meat from crushed snails, if you've the courage to do the first part!



Baiting a trap is a really practical way of dealing with snail infestations. Place a small piece of raw meat under a slightly upturned dish, or a jar, overnight in the aquarium or pond and next morning simply empty out all the snails gathered there (plus any Leeches too).

Commercially-available anti-snail remedies are often chemical-based which most fishkeepers would rather avoid using. If there is a heavy infestation, their sudden die-off could cause pollution problems; always carry out some water change after using remedies for this reason, and certainly take out any dead snails.

The use of a low voltage battery can also be efficacious: two wires placed at each end of the tank and connected, say, to a bell-battery and the weak current through the water does the rest. Snail infestations are less likely to be found in soft, acid waters where the necessary calcium component (required for shell maintenance) is lacking.

KNOW YOUR FISH



***Micropoecilia picta* Red**

Family: Poeciliidae

Scientific Name: *Micropoecilia picta*

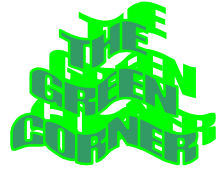
Comon Name: Swamp Guppy

Description: This vibrantly-coloured fish shares the same homeland waters of Trinidad as its close relative the Guppy, but is also found way down further into Surinam, South America.

Reportedly, it inhabits brackish waters although the waters in Paramaribo, Surinam are soft. There seems to be differing reports about whether to add salt to its aquarium water is not necessary or not; maybe those from Trinidad waters don't need it whilst those from Surinam do?

Again, like the Guppy, males of this fish can be particularly harassing towards the females, and keeping large numbers of mixed sexes together seems to be one way of lessening this threat. Females are also reported to be decidedly weakened by giving birth and therefore should be not only a well-planted separate aquarium in which to deliver their young, but also given a convalescent period before being re-introduced back into mixed company. A complicated process when you realise that the adults predate on their own young!

The area for
aquatic plant-lovers



A Walk in the Park

OK, not just any Park but Rio de Janeiro's Jardim Botânico, well away from the frenetic pace on Copacabana Beach or the Carnaval itself.

Where else could you find blue tropical lilies basking in the hot sunshine, a very contented Cichlid cruising the shallows near the edge and, of course, taking centre stage the magnificent *Victoria amazonica* Water Lily



whose equally large bright pink flower bud can just be seen at the edge of one of the huge pads.

FISH HOUSE CRUNCH



In the last issue of the Bulletin (March 2009) we dealt with the rising costs of running a Fish Club, well the recession is still here with us, and with heating costs also still rising running a Fish House is an expensive part of our hobby. The pictures that show the extra insulation I have added to my Fish House, will make you say "Why bother now? It's summer with outside temperatures in the mid 20's C. You must be joking."



My Fish House takes up 25% of my integral garage at the side of my house and runs under two upstairs bedrooms. It then extends out into the garden by a further metre.

The roof and sides including a door to the garden are all glass - a design feature due to the love I have of growing aquatic plants and direct sun plays a big part for this part of my hobby.



At this time of the year it sucks up a great deal of heat as well as sunlight, so much so the door at this time of the year is often open.



This is in contrast to when the winter temperatures fall below freezing and its not only hot air that flows out, but cold air coming in through the glass that makes the heating cost increase by double. So this is just the time to be ready for next winter while it's a pleasure to work instead of those cold winter days.

Your Fish House may well not be the same as mine, but there may well be aspects of your Fish House that are the same. I first tried placing "bubble wrap" on the inside of the glass with double-sided tape to hold it all in place, but it kept becoming unsecured. I next tried curtaining, dividing the outer part of the Fish House from the fish tanks located in the garage part. However during water changes and other forms of maintenance the curtains got wet, so they had to go.



What I wanted was a partition that would not only insulate the area housing my tropical aquariums but could easily be removed in summer.

So I made a framework using just soft wood purchased from the local DIY store. The frame was all joined together by "L" shaped brackets so you do not need super carpentry skills. I screwed triple laminated plastic sheeting to the framework, also purchased at the DIY store. I introduced an opening with a door all made of the same material.



I can tell you this works perfectly and still lets the outside light in.

Plus when the temperature rises I just undo a few securing screws and remove the hole partition, and this I store till the next year.



Remember for those who need soft water for their fish, don't forget to save all the snow when it comes, this needs collecting as soon after it has snowed, collecting off of cars or areas that are clean and not contaminated. It all adds up to saving on those ph controllers.



As well as heaters in every aquarium I have a fan heater that is thermostatically controlled and set to come on when the temperature falls to 20°C but most of the times I enter the Fish House in winter, it is rarely running.

Malcolm Goss

ASK US

It's different this month – we want *you* to provide the answer!

After 12 months or so after setting up my first aquarium here in Bali I give up on trying to use live plants!

My aquarium is 1.2 meters long, 41cms wide and 50 cms deep (to gravel level). Illumination is by 3-30 watt renewed fluorescent tubes, one being blue. Not overstocked, with the “normal” community fish.

Since first setting up the aquarium I have made more trips to the shops to renew plants than I can count. Mostly they fade away and die after a week or so and ‘Vallis’ just shrinks away to nothing! My latest experiment has failed and the red-coloured plants have died off already after just 10 days.



My latest “experiment” was to install 2 small aquariums within the main tank, filled with gravel to 5 or 6 cms. from the top, then about 4 cms of Tetra substrata and 2 cms of gravel. A mixture of plants were added plus some liquid plant growth.

The plant “boxes” are 30cm long and 20cm high. A second front glass was added to hide the “layers” of gravel and substrata. After a few days I added some Neons and Rummy-noses to the aquarium.

Now, after 2 weeks, there is no change in the green plants except for some leaves floating about. Everything is a bit droopy and the plastic plants look more alive than the real ones! I will try out a CO₂ experiment as a last resort but if that fails then I will not throw more money away on live plants. Much as I hate the thought of only using plastic plants it seems to be the only thing left to me.

I would mention that the water temperature is always around 30° –33°C (no heater required here!). Can you come up with the magic cure for me?

Clive Walford, Bali

SEX REVERSAL IN SWORDTAILS



POSSIBLE OR IMPOSSIBLE?

For many years aquarist have talked about how Swordtails (*Xiphophorus helleri*) have changed from being a female into a male, almost as elusive as that 6" long Swordtail seen on the Showbenches of years gone by!

Although I have been told many times when talking at Fish Clubs on cultivated livebearers, that female Swordtails can change sex, proof of this has never been offered. Most aquarist who claim to have witnessed such transformation have the same story, an old female develops a short sword within the tail and assumes the general body shape of a male. This well may be caused by a hormonal imbalance brought on by old age.

To understand what is actually involved in sex reversal, we must first understand the normal reproductive process of Swordtails.

The Swordtail does not lay eggs, but gives birth to living offspring. The gametes, sperm by the male and eggs by the female, are produced by the gonads; the male gonads are the testes and the female gonads are the ovaries. Eggs are fertilised in the body of the female by spermatophores, packets of sperm. This is achieved by the male during copulation with both side and forward movement of the gonopodium.

The movement of the gonopodium of the male, and the anal fin of the female depends on the skeletal structure called the gonopodial suspensorium in the male and the anal fin suspensor in the female.

In the male the gonopodial suspensorium consists of the gonapophyses and the ligastyle, which are actually modified hemal spines, and a series of bones called the gonactinosts. For the male to be able to swing the gonopodium in a proper manner to make contact with the female, the gonopodial suspensorium must be present to provide anchorage for the muscles that control the movement of the gonopodium during mating. Within the anal fin, and suspensorium of the female there are no gonapophyses or ligastyle. However both are present in all young fish, but in females they are absorbed during sexual development. Instead of the large gonactinosts of the male there are smaller actionists where this type of body development provides space within the females body for her young to develop.

Functional sex reversal is defined as a change from a functioning female, that produces offspring, to a functioning male, that produces offspring when mated to a virgin female.

To prove functional sex reversal in a female Swordtail the ovaries must be destroyed or inactivated and sperm producing testes developed. Spontaneous and functional sex reversal would be very complicated process, a lot of internal changes, so much more than seeing a sword growing from the base of the females caudal fin.

The development of the gonopodium in the male Swordtail, is brought about by male sex hormones produced by specialised cells of the gonads. We do not know the exact nature of the hormone within the male Swordtail. Researchers have used various commercially-prepared hormones in sex reversal experiments, one of these, ethynyl testosterone was used to cause a female Swordtail to develop a sword and gonopodium by Dr Sangster in 1948. X -Rays were found to have an effect on the external or secondary sexual characteristics of Swordtails and used to induce masculinisation of the anal fin of young females reported by Vivien in 1950.

Fisheries Research Laboratory at Southern Illinois University, treated a mature female Swordtail with the commercially-prepared male hormone methyl testosterone, to see what effect this would have on the anal fin suspensorium. The fish had given birth to offspring before treatment was started, so providing proof that this was a female and not a slow developing male.

The skeletal structure of this fish was examined using X-rays prior to starting the treatment. The fish was fed food that contained 220 parts per million of methyl testosterone for 122 days. Then further X-rays were taken after the 122 days, and these showed that the actinosts have become masculinised to some extent. However there was no sign of regeneration of the ligastyle or gonapophyses. The anal fin of the treated female when compared to that of a normal gonopodium, did become masculinised to a certain extent. The tip was somewhat deformed and incomplete, therefore this fish was never seen to swing the gonopodium. Unfortunately this fish died before any breeding tests with virgin females could be carried out.

It would be necessary for a great many changes to take place in a single individual fish to bring about functional sex reversal, and no proof that this is possible has yet been presented. It must also be said that whilst no proof has been presented, that it is not impossible either.

The evidence presented here, and elsewhere, strongly supports the conclusion that functional sex reversal of an adult Swordtail is improbable. Most reported instances are probably changes of the secondary sexual characteristics, brought on by hormonal imbalances that, in many cases accompany old age. Just look around you, we see it in humans all the time!

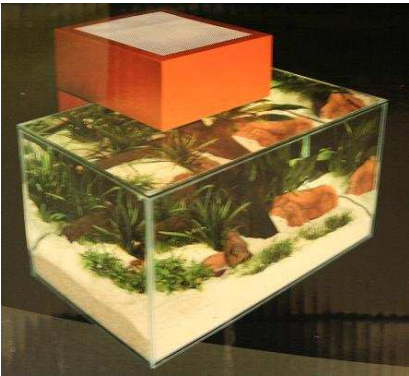


NEW PRODUCTS

Have you spotted any of these at your aquatic dealer's?

We all look to Spring-time for signs of new life, and it's no different on the product front as manufacturers bring out new ideas and designs.

Rolf C Hagen



Any new aquarium design, such as **Hagen's** new **Fluval EDGE**, is to be welcomed, especially at the smaller end of the scale as this is the 'entry level' for those most important of fishkeepers – youngsters, who are the basis on which the hobby relies for its continued survival.

It's easy to see where Hagen are coming from – kids will love the design, it's small enough for a den or bedroom

Despite original fears, the lid is not sealed and even with the aquarium brimful of water (who wants to see a tank top bubble of trapped air anyway?) the small power filter maintains more than an adequate flow rate around the tank.

With an optional heater fitted, just imagine how attractive this aquarium will look when home to a shoal of Galaxy 'Rasboras' or even traditional Neon Tetras.

Negative comments from experienced, 'been there, got the T-shirt' fishkeepers may appear off-putting, but providing all the constructively-aimed rules are complied with, there is no reason why the EDGE can't be a success for those willing to accept its limitations.



An innovative feature of the **FLUVAL U3** internal power filter is the three-way return water-flow distribution system. Apart from offering top, middle and bottom directional flows (with optional venturi-assisted aeration), this filter can also be laid horizontally on the tank substrate (maybe obviating the problem of suction caps relinquishing their grip after a time?).

The actual filter media is incorporated in easy-to replace modules: two are formed by traditional carbon-backed foam sponges whilst the third offers biological filtration capabilities.

Cleaning the filter is made simpler by means of a forward tipping action to release the filter from its retaining bracket. The modules are then easily withdrawn for replacement.



Technical Specs		FLUVAL U Series			
MODEL	U1	U2	U3	U4	
OUTPUT	250 L (65 US Gal.)	400 L (105 US Gal.)	600 L (155 US Gal.)	1000 L (260 US Gal.)	
WATTAGE	5W	5W	7.5W	12W	
AQUARIUM SIZE	55 L (15 US Gal.)	45-110 L (12-30 US Gal.)	90-150 L (24-40 US Gal.)	130-240 L (34-65 US Gal.)	

The FLUVAL U3 range of filters comprises four models suitable for aquariums ranging in size from 250 litres (65 US gallons) to 1,000 litres (260 US gallons). Power consumption is a miserly 5-12 watts depending on model.

Got fish with special dietary needs? Have no worries, the **NUTRAFIN MAX** range of foods will satisfy almost any fish appetite you care to name.

Flake, tablet or granular presentations are offered in the following 'flavours':

Earthworms Flakes, Goldfish Flakes,

Cichlid Sinking Granules,

Predator Sticks, Pleco Logs, Colour Enhancing Flakes, Livebearer Flakes, Tropical Fish Flakes, Discus Sinking Granules, Spirulina Tablets, Bottom Feeder Sinking Tablets and Baby Fish Formula.

All are further enhanced with multi vitamins and, in some cases, Omega 3.



Please visit www.hagen.com

Interpet

Most youngsters have got i-Pods, and now they'll be pestering their parents for a **FISH POD**, one of the latest introductions from **Interpet**.



In two sizes - 48 or 64 litre s – Fish Pods are complete aquariums in a box. Made from scratch-proof curved glass, rather than acrylic, this good looking design can be complemented by an optional cabinet type stand which has chrome handles and one shelf inside.

Highly efficient PF internal filters provide ample water flow and purification; included are 2 foams together with a foam carrier for mechanical and biological filtration, a separate carbon foam, flow control, head rotation, venturi and Interpet's unique, patented Aqua Valve, the unique non-return valve which prevents spillage when removing the filter for cleaning.

RIVER · REEF

AQUARIUM



- Beautiful design with curved glass
- Looks elegant in the home and gives panoramic views of the underwater world
- Available in 2 sizes in black and silver: 40cm/48 litres and 50cm/94 litres
- High output T5 PC Daylight Plus lighting: 40cm/48W and 50cm/72W
- LED lighting gives a beautiful night mood
- Independent light switches
- Come with built-in cooling fans
- Comprehensive 3 stage filtration system
- Cabinets are also available in black and silver
- Plant and marine kits are available separately



head provides not only superior biological filtration but also allows the filter foams to be cleaned more thoroughly, as doing so will not affect the biological effectiveness of the filter.



Individually switched twin lighting system comprises a high output 15w compact Bright Day Light and a high output 15w compact Cool Blue Moon light for a relaxing night-time mood. These lamps feature built-in reflectors and splash protectors.



The aquarium hood has an easy use feeding hatch and also a special fitting aperture for fitting an optional Interpet Auto Feeder.



The Deltatherm heating system has a built in thermostat which ensures stable and simple temperature control.

This kit also includes Tap Safe water treatment and Filter Start, plus a simple thermometer to keep a track on the aquarium water temperature.

The handling performance of any pump is limited by the size of any protective 'filter' surrounding the pump itself, whether it be foam or simply perforations in the surrounding cage.



The new **FORCE HYBRID** range is a genuine solids-handling pump – if debris gets through the large holes in the pump's outer container then it will be delivered to the filter, and not harming the impeller on the way.

Another consideration for pump performance is how it deals with 'head' – the eventual delivery height above the surface. Then there's the added factor of electrical consumption. Fortunately, the new pumps can cope with either most competently.

Even the smallest model (the FH5000) will deliver 1100 litres at 2.5 metres head, whilst the largest (of the six models in the range) will provide 1500 litres at double this height.

Practicality is assured with easily-removed cage for cleaning, an almost 360° 'universal ball joint' for exact hose inlet positioning plus a two-way lever action that allows water to enter the pump from all around or from the top only – hence the pump can be used right down on the pond base.

Please visit www.interpet.co.uk and www.blagdonthepondmasters.co.uk



Star Fisheries
Competition

WIN **£250.00** **VALUE**

OF
HIGH-QUALITY
FANCY GOLDFISH!!!

To enter: Simply study the 'Star Fisheries' article in this magazine, and send ONE of the suggested answers to the question below to the Editor **before 1st August**

Question: Where are Star Fisheries located?

- a) Longfield
- b) Lingfield
- c) Langfield

The winner, drawn at random from all correct answers received, will be able to select fish up to the value of £250 from Star Fisheries by arrangement with Andy Green

SHOW & EVENTS DIARY

(full details can be found on FBAS website www.fbas.co.uk)

FBAS GENERAL ASSEMBLY (tel:01424 431016)	6th June
BJA - MIDLAND CHARITY AUCTION	7th June
SHEAF VALLEY A.S. OPEN SHOW & AUCTION (YAAS RULES)	7th June
T.T.A.A. OPEN SHOW	7th June
BRACKNELL A.S. OPEN SHOW (tel: 01344 452483)	14th June
WORKINGTON A.S. OPEN SHOW & AUCTION (FSAS RULES)	14th June
SOUTHEND LEIGH & D.A.S. AUCTION 8.30 p.m.	16th June
CASTLEFORD A.S. OPEN SHOW & AUCTION (YAAS RULES)	21st June
CATFISH STUDY GROUP 'Catfish Habitats'	21st June
UNION OF SCOTTISH AQUARISTS OPEN SHOW & AUCTION	21st June
A.M.G.K OPEN SHOW & AUCTION (NGS RULES)	27th June
BRISTOL TROPICAL FISH CLUB OPEN SHOW & AUCTION	27th June
CLUB 2000 A.S. OPEN SHOW & AUCTION	28th June
N.W.CICHLID GROUP AUCTION	5th July
Y.A.A.S. OPEN SHOW & AUCTION (01723 584916)	5th July
PRESTON & D.A.S. AUCTION 12 noon	12th July
PORT TALBOT & D.A.S. OPEN SHOW & AUCTION	18th July
CATFISH STUDY GROUP 'Migration in Catfish'	19th July
SOLWAY A.S. OPEN SHOW & AUCTION (tel: 01387 750606)	19th July
NE GOLDFISH SOCIETY OPEN SHOW (IGS RULES)	19th July
N.E.Y.G.B.K.A. KILLIFISH SHOW & AUCTION	19th July
SCCRS OPEN SHOW	26th July
GR MANCHESTER CICHLID SOCIETY AUCTION	26th July
MERSEYSIDE A.S. OPEN SHOW & AUCTION	2nd August
FRIENDS OF YORKSHIRE OPEN SHOW & AUCTION	9th August
CATFISH STUDY GROUP 'Setting up Catfish Aquarium'	16th August
PERTH A.S. OPEN SHOW & AUCTION (tel: 01738 621704)	16th August
CASTLEFORD A.S. AUCTION 8pm (tel 01977 730754)	19th August
A.S.A.S. SHOW (venue to be confirmed)	23rd August
SCOTTISH FEDERATION AUCTION	30th August
THREE COUNTIES SHOW (to be confirmed)	30th August
FBAS GENERAL ASSEMBLY (tel:01424 431016) TW8 8NT	5th September
THE LONDON OPEN SHOW (A of A RULES)	6th September
BJA CONVENTION	11-13th September

SCOTTISH AQUARIST FESTIVAL (CHECK DATE)	13th September
SHEAF VALLEY A.S. AUCTION 8pm Pre-booked Lots only	13th September
CORBY & D.A.S. 2nd AQUATIC CONVENTION	13th September
HOUNSLOW & D.A.S OPEN SHOW	19th September
NTHN GOLDFISH & P.S OPEN SHOW & AUCTION	19th September
CATFISH STUDY GROUP OPEN SHOW & AUCTION	20th September
FAIR CITY A.S. OPEN SHOW & AUCTION	27th September
KAAS OPEN SHOW & AUCTION (tel: 01634 221291)	27th September
GR MANCHESTER CICHLID SOCIETY AUCTION	4th October
RYEDALE A.S. OPEN MINI-SHOW & AUCTION	4th October
FBAS FESTIVAL OF FISHKEEPING	9-11th October
SCOTTISH AQUARIST FESTIVAL (CHECK DATE)	11th October
SHEAF VALLEY A.S. AUCTION 8pm Pre-booked Lots only	12th October
ILFORD & D.A.P.S 75th ANNIVERSARY DINNER	17th October
HOUNSLOW & D.A.S CLOSED SHOW	18th October
CATFISH STUDY GROUP 'Plants for Catfish Aquarium'	18th October
KIRKALDY A.S. AUCTION	18th October
MERSEYSIDE A.S. AUTUMN AUCTION	18th October
STAMPS AUCTION	18th October
SOUTHEND LEIGH & D.A.S. AUCTION 8.30 p.m.	20th October
BASINGSTOKE A.S. OPEN SHOW	25th October
BRITISH AQUARISTS FESTIVAL	25th October
BKA West London AUCTION	1st November
N.W.CICHLID GROUP AUCTION	1st November
BRADFORD A.S. OPEN SHOW & AUCTION	8th November
CATFISH STUDY GROUP AUTUMN AUCTION	15th November
CASTLEFORD A.S. AUCTION 8pm (tel 01977 730754)	18th November
SCCRS AUCTION	22nd November
FBAS GENERAL ASSEMBLY (tel:01424 431016)	5th December
CATFISH STUDY GROUP CHRISTMAS MEETING	13th December

Festival of Fishkeeping & Water Gardening Weekend

October 9-11, 2009 at Mill Rythe Holiday Village, Hayling Island, Hampshire



This year's events:

- Festival Aquarist Society Masters' Open Show (on Sunday - sponsored by Hagen)
- The Tetra Southern Koi Festival jointly sponsored by Tetra and RO-MAN
- Goldfish Society of Great (sponsored by Star Fishies)
- British Open Final (on Saturday - sponsored by Tetra)
- The FBAS Supreme Championship Final (on Sunday - sponsored by Tetra)
- Carish display Saturday
- Minchu Koi - UK Fanchu Spectacular Goldfish sponsored by Star Fishies
- UK Discus Show (jointly sponsored by Tetra and RO-MAN)
- Society-furnished aquaria (sponsored by Tetra)
- Hagen Eco Tetra reptiles
- Speakers from the aquatic and water gardening worlds
- Furnished aquariums, pond and water garden displays, reptiles, trade displays.



New This Year Craft Marquee

PLUS
SPECIAL
OPEN BOWLS
COMPETITION!

JOINTLY
SPONSORED BY



RO-MAN

Star Fisheries



A host of exciting attractions for both residents and day visitors, including:

- Freshwater tropicals
- Discus
- Marine fish
- Koi and goldfish
- Native freshwater fishes
- Filtration and lighting
- Water gardening
- Reptiles

Prices

Half-board

Two-night weekend £95

Three-night weekend £115

Lunch available both days

Cabaret entertainment, fancy dress competition and dancing on all three nights.

Hotline bookings: Contact Grace Netherell, 8 Acacia Avenue, Brentford, Middlesex TW8 6NR. Tel: 0208 847 3585.

Day visitors

Day visitors welcome on Saturday, October 10, and Sunday, October 11, 10am-5pm.

Day Visitors GET IN FREE!

With Compliments



Supporting the hobby of
fishkeeping