FISHKEEPERS' AND WATER GARDENERS'

BULLETIN

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A CLOWN BOTIA HIDING IN MY POND?

See Article on page 15

JOURNAL OF THE FEDERATION OF BRITISH AQUATIC SOCIETIES

www.fbas.co.uk

Dear Readers,

Once again, the Supreme Weekend of Fishkeeping is almost upon us. This year, in addition to the main Open Show on the Sunday, there is a Catfish Show, a Killiefish Show, a Goldfish Show and a Discus Show. A full weekend is planned and it should be even bigger and better than ever.

A big thank-you to all who have contributed to this issue and please keep those articles and items coming - there can never be too much so don't leave it all to somebody else, put pen to paper and send something in. You can send it in any format you like including floppy disk, CDR, memory stick, typed or hand-written hard copy, etc. We will, of course, return your disk, etc if requested.

Happy fishkeeping,

Peter Furze

Editor

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THE GILLS OF FISHES - PART TWO

Dr Peter Burgess, Senior Consultant, Aquarian® Advisory Service
(email: *AquaticsDoctor@aol.com*)

In part 1, we outlined the various functions of the gills and listed some of the major symptoms of gill disease. We shall now focus on the underlying causes of gill damage in aquarium and pond fish, notably environmental problems, pathogens and parasites.

Gill damage and respiratory stress

The gills generally react to pathogens or irritating water conditions by secreting copious amounts of mucus that acts as a protective coating. This tissue response unfortunately has a downside in that the thick mucus layer impedes the movement of vital oxygen and other substances across the gill tissues. In certain cases where the gills become damaged or diseased, they may erode and lose their fine structure, or they may become abnormally enlarged or stick together.

These tissue changes reduce the gill's ability to perform its vital functions, such as respiration, excretion and osmoregulation. It is the damaging effects on respiration that are most obvious to the fish keeper. Signs of respiratory stress include fast gill beats; gasping or gulping at the water surface; congregation of pond fish near fountains where oxygen levels are richer. Fish that have died from oxygen starvation may exhibit flared gills and open mouths.

If your fish show signs of respiratory stress:

1. Increase aeration where appropriate. This may help the fish cope with the situation.
2. Next consider whether the problem might be due to low oxygen levels in the water, perhaps as a result of inadequate aeration, very high water temperature, overstocking, or pollution. Low oxygen levels are a common cause of mass fish mortalities in the summer pond.
3. Do some water tests: ammonia, nitrite, pH. Are the results all within acceptable limits?
4. If a water problem is ruled out, investigate for possible gill disease caused by pathogens or parasites (discussed later).

Clue:

If several previously healthy fish suddenly develop respiratory problems (i.e. within a 24 hour period) then it is most likely to be a water problem.

Environmental causes of gill damage
Certain adverse water conditions may affect the gills:

a) Extremes of pH

Aquarium or pond water that is too acid (or more rarely, too alkaline) can harm the gills. As a very general rule, should the pH fall below, say, 5.5 or rise above, say, 8.5-9.0 then the gills may become irritated or damaged. (But note that some species of fish actually require very low or very high pH conditions.)

Investigation: Check the pH using a test kit. Increasing acidity may be due to the build up of organic acid wastes in the water, indicating that a partial water change is overdue.

b) High ammonia levels

High levels of ammonia have been linked with adverse changes to the gill tissues.
Investigation: Check ammonia level using a test kit. Bear in mind that ammonia toxicity increases with water temperature and with increasing pH. If a high ammonia value is obtained, perform a large partial water change without delay, and/or add an ammonia-removing resin (e.g. API Nitra-Zorb for freshwater systems). These are short-term measures while you investigate and remedy the underlying cause – usually inadequate bio-filtration.

c) Chlorine toxicity

Tap water contains chlorine-based disinfectants (chlorine or chloramine) to make it safe for drinking. However, both chlorine and chloramine will "burn" the fish's gills. Raw tap water should therefore be dechlorinated before exposing fish to it. This is most important when making substantial water changes to the aquarium or pond. (**Note:** aerating the tap water, or allowing it to stand for a day, will remove chlorine but not chloramine.)
To play safe, choose a dechlorinator product (such as API's Stress Coat) that deals with both chlorine and chloramine.

d) Heavy metals and poisons

Various chemical contaminants can harm the gills, including many heavy metals (e.g. zinc, copper, mercury, cadmium and lead). In general, avoid immersing bare metal objects in waters that house fish. (Some water conditioner products, such as API Stress Coat, neutralise any heavy metals in the water).
Also take care not to accidentally use insecticides or herbicides in the vicinity of an aquarium or pond – many such chemicals are highly toxic to fish, even in tiny quantities, affecting the gills, nervous system, and other organs.

The gills: a five star hotel for pathogens:

As far as many pathogens are concerned, the gills are ideal places to invade, for several reasons:

1) Being in direct contact with the water, the gills are easily reached by water-borne pathogens such as bacteria and small parasites.
2) Beneath the gill's thin walls is a rich blood supply that can be penetrated as a means of entering the blood system or obtaining a blood meal.
3) The gill environment is highly oxygenated – ideal for air-breathing pathogens.

Gill pathogens

1) Viruses

Certain viruses are known to cause gill damage or elicit mucus over-production by the gills. These include the Koi Herpes Virus (KHV) that poses a serious risk to the koi industry. Confirming that a virus really is to blame can be very difficult as the outward signs may be vague and viruses are far too small be seen using

conventional microscopes. Instead, precise diagnosis often relies on expensive blood tests or other specialised laboratory procedures. Unfortunately, viral infections in fish are currently untreatable.

2) Bacteria

Various types of bacteria have been linked with gill infections, including Flavobacterium species that cause bacterial gill disease (BGD) in koi and other pond fish. Affected gills may develop small grey-white spots. Promptly treat suspected bacterial infections with an anti-bacteria remedy (e.g. Melafix).

3) Fungi

Saprolegnia and related fungi may occasionally attack the gills of fish. Generally, only gills that are already damaged for some reason (e.g. due to parasite attack) are prone to fungus invasion. The fungus may appear as white or grey patches. An anti-fungus remedy (e.g. Pimafix) should be used. In addition it is important to investigate for any underlying problem that could have triggered the fungus to take hold in the first place.

4) Protozoa (single-celled parasites)

Several protozoal parasites attack the gills and other surfaces of fish. These include the whitespot parasite (Ichthyophthirius), Trichodina, Ichthyobodo (= Costia) and Chilodonella. Outward signs vary according to the type of parasite involved but may include mucus over-production, respiratory stress, as well as symptoms associated with the parasite's presence on the skin - such as repeated body rubbing, haemorrhaging, or skin cloudiness. Fortunately, there is a good range of remedies on the market to combat gill-and skin-parasitic protozoa.

5) Large gill parasites (multi-celled parasites)

Notable examples are the gill flukes (Dactylogyrus) and gill maggots (Ergasilus). Despite its common name, the gill "maggot" is actually a parasitic crustacean (a distant relative of crabs and shrimps). Neither of these parasites is easy to eradicate, however several over-the-counter remedies are on the market for dealing with fluke and crustacean problems in fish.

Why do fish die out of water?

Air contains approximately 20 to 30 times the amount of oxygen found in water. Given that air is so rich in oxygen, why do fish suffocate when out of water? The reason is that their delicate gills collapse in air. This greatly reduces the available gill surface area for gas exchange, and so the fish is unable to get enough oxygen to its tissues. That's why you shouldn't keep a fish out of water for more than a couple of minutes (the risk of its skin drying is another reason).

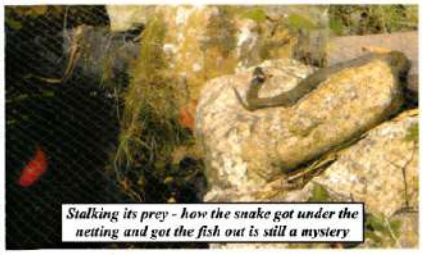
Need expert advice?

The **Aquarian Advisory Service** can help with your enquiry. Visit www.aquarian.com. General fish-keeping advice, nutritional problems and water quality issues are usually dealt by Dr David Ford. Fish disease problems will be dealt by Dr Peter Burgess.

A REAL SNAKE IN THE GRASS

Article by kind permission of the Isle of Wight County Press
Pictures generously supplied by Mr Mike England

Isle of Wight pond keeper, Mike England had a slithery surprise when he walked down his garden path to find a snake trying to gobble up one of his goldfish.



Stalking its prey - how the snake got under the netting and got the fish out is still a mystery

The grass snake, about three feet long, had managed to grab and drag the fish out from Mr England's garden pond on a Sunday afternoon in late August. As the picture below shows, the snake had tried to bite off more than it could chew.

A bit of a mouthful - the snake trying to swallow the goldfish it dragged from the pond.

The 59 year old of Broadway, Totland, on the Isle of Wight, who was among the Island's first recorded set of triplets to survive infancy, said: "I've never seen anything like that before in my life. It was pure luck I happened to be walking down the garden path at the time.

"The snake had the fish's whole head in its mouth and was trying to eat it, so I rushed into the house and got my camera. How it got hold of it and up over the net covering the pond is something I haven't yet managed to figure out.

"It eventually let go of the fish, I put the fish back in the water and it swam off. I know grass snakes eat baby frogs and toads and will eat fish but I didn't think it would try to eat something that big."

UPDATE ON VIRAL & KOI DISEASE DETECTION

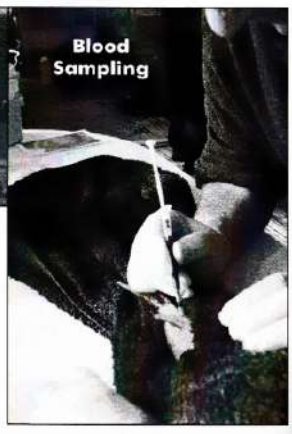
Rod & Gerry Isted (Healthy Koi Ltd.)

Up to the summer 2006, our main diagnostic tool which we used to confirm suspected cases of KHV was the Polymer Chain Reaction (PCR) test. This test involved the culling of the Koi for viral and pathological examination. However, the use of this test was limited as it was only viable during the active stage of the disease and does not detect the carriers which can become subsequently active when the required temperature and stressors conditions are met. When this occurs, the carrier can infect others.

In addition to this 'standalone test', we very much favour the **Western test**. This totally new type of test looks at components in the blood sample and gives us a wider picture on recent exposures to any serious disease.

With the advent of the new tests and improvements in intravenous blood sampling techniques, it is possible to test a fish for a virus without the need for culling, which predated methods used

Gerry Recording the Koi



Blood Sampling

With the development of the **ELISA** (Enzyme Linked Immunosorbent Assay) test, a small blood sample is taken from live fish, which are anethised first. Koi which have been exposed to KHV or have been vaccinated, will carry antibodies which, within a prescribed time frame, can be detected. If positive, the Koi will have the potential to transmit the virus to naive (previously unexposed) Koi and cause a disease outbreak in those fish.

In addition to the virology testing, blood samples can also be used to test

Sample Vials

the normal physiological functions of the fish and to check toxic exposure in major organs such as the liver and kidneys. Dietary problems such as anaemia are often encountered during periods of poor health and in extreme cases, can be corrected using vitamin deficiency injections. Testing the functions of a fish's major organs can be of vital importance if toxicity is suspected and there is the need to administer antibiotics. Some antibiotics such as many of those in the Aminoglycides group can put more strain on organs such as the liver, than others. If these organs are already in poor state, from say, toxic exposure, then there is the possibility of failure and mortality if these are used.

In looking at bacteriology, all difficult systemic or ulcerated infections, and those which are having difficulties in healing, were previously sampled on the surface using a carrier swab. This was then sent to the pathology lab for bacteria identification and anti-biotic sensitivity testing. This method has its limitations. As it's a 'surface' swab, you can also be sampling bacteria from the pond environment and not identifying the primary culprit. However, a blood sample can look for 'deep seated' internal pathogens which may be causing the infections, and the most effective antibiotic to use can be found more easily.

At Healthy Koi we firmly believe in the advantages of using blood sampling as a diagnostic tool and work to advance this area. As few in the UK undertake blood sampling at the present time, we donate surplus blood samples to the few UK laboratories who conduct viral research and to one which is currently developing a new KHV vaccine.

We would like to give a very big thanks to all the fish keepers who allowed us to pass on surplus blood samples from their fish stock, to benefit all.

Thankfully with the cooler weather, the incidence of KHV has been lower this year. Unfortunately we have been involved with several instances of metal toxicity problems, which appears to be on an increase. Water samples and blood samples have proved invaluable in diagnosing this problem and in directing treatment. Although Koi keepers don't test for metals as standard, it is important to be aware that significantly high levels of metals in the water can be harmful and potentially fatal for our fish.

Testing for metals is not normally needed in our local South Coast area as the levels in our water supply, which comes from the deep chalk aquifers, are fairly low. However, in other parts of the country, metals testing should be undertaken during the setting-up stage of your pond to give you an indication if remedial measures should be taken. Before doing this, check with the

Schedule 4 water quality report for your area which can be obtained free of charge from your Water service provider. For areas where metal levels are higher in the water supply, water purifiers are available that remove high levels of metals from the supply.

In addition, you should be aware of the ingredients in any water additives that you may use in your pond or tank. Examples are disinfectants and blanket weed inhibitors. Please check the ingredients of your products, even those which are 'natural' and are 'environmentally friendly', as you could be unwittingly adding unsafe levels of chlorine or metals back into your water.

Finally, just a reminder; all your Koi need is excellent water quality, plenty of air, good filtration, a balanced diet, protection from the environment and plenty of TLC.

Should you require any further information, help, or you have any concerns or require a check-up for peace of mind, please do not hesitate to give us a call. We are able to help you with the diagnosing of a problem and provide you with all the assistance you need.

Please note that intravenous blood sampling should not be carried out by the hobbyist but only by those with professional experience. Factors such as needle size, volume of blood removed and the positioning of the needle are critical if you are not to injure your fish or cause unnecessary suffering.

Rod & Gerry Isted
Portsmouth A.S.
Healthy Koi Limited.
01243 572762
Aug.2007

KNOW YOUR FISH

Honey Gourami - *Trichogaster chuna* (Hamilton, 1822)

Common Names: Honey Gourami, Honey Dwarf Gourami, Sunset Gourami.

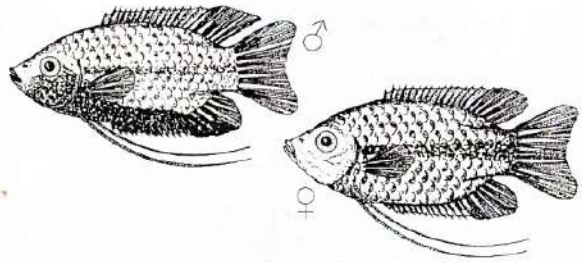
Scientific Name: *Trichogaster chuna*

Synonyms: *Trichopodus chuna, Polyacanthus sota, Colisa chuna, Colisa sota, Trichopodus sota.*

Family: *Osphronemidae* (Gouramis).

Sub Family: *Luciocephalinae*

Where found: Asia, India and Bangladesh. Inhabiting pools, ponds and ditches. Can be found in streams and rivers where there is adequate vegetation.



Characteristics: Body shape as illustrated. The colour of the body is tan with a yellowish cast. The front and lower part of the head and the chest area is a dark olive-green to black colour which spreads into the anal fin and tapers down towards the rear of the fish. The dorsal fin of the male shades from plain light brown to gold with a dark stripe on the lower area. The female is smaller than the male, has shorter fins and is less colourful. As with many gouramis, the dorsal of the female is rounded while that of the male culminates in more of a point.

Tank Preferences: Soft slightly acid to neutral water at around 72 - 82° Farenheit (22 - 28° Centigrade). Can be kept peacefully in a community of small fish except when breeding when the males can become quite aggressive. Relatively still water is preferred with plenty of floating plant which they use for cover and for inclusion in bubble nests.

Breeding: Although generally peaceful, males can become territorial at breeding time. The male builds a bubble nest among floating plant, etc. and, after spawning has taken place, guards and tends the nest replacing eggs and fry as necessary. Eggs hatch in one to one and a half days and the fry become free-swimming about a day after hatching. First food - infusoria until large enough to take newly hatched brine shrimp, etc.

Remarks: Several 'man-made' colour varieties exist.

Current FBAS Show Size: Male - 40mm, Female 45mm.

FBAS Show Class: 'E'

COLOURATION AND DIET

Rupert Bridges (Tetra)

Colouration and diet

Tropical fishes come in all different colours in the wild, and this is part of their attraction to us. However, if we are to maintain and optimise their colours in our aquarium, we need to feed them a diet that contains effective colour enhancers. This article explains how diet is crucial to the colour of our fish, and provides some suggestions for improving it.

Colouration in fish

The colours displayed by our fish are the result of a combination of factors. Coloured pigments are held in special cells called chromatophores in the skin. The most important pigments are carotenoids, which are responsible for reds and yellows, and melanins (blacks / browns). The distribution of chromatophores is genetically determined, but the pigments themselves are derived from the fish's diet.

In addition to the coloured pigments found in chromatophores, they can also contain reflective crystals which make the fish shiny. The concentration of reflective crystals will determine just how shiny a fish is, and they are most obvious in species that are silver. The key chromatophores found in fish are as follows:

Melanophores – Black / Brown
Erythrophores – Red
Xanthophores – Yellow
Iridophores & Leucophores – contain reflective crystals

It is the red and yellow chromatophores that are most affected by diet, and so it is these that we can best enhance using colour-promoting foods. However, this does not mean we can only improve red and yellow colouration - various other structures, such as proteins, work in conjunction with the chromatophores to produce the wide range of colours seen in fish. For example, the blues seen in neon tetras are the result of a combination of chromatophores and proteins. Another good example, albeit not directly related to fish, is seen in lobsters. The natural colouration of lobsters and shrimp is blue – the result of a red carotenoid (astaxanthin) being combined with a protein to produce blue 'crustacyanin'. When they are cooked the protein is separated from the carotenoid, leaving only the red colouration behind – hence why we tend to think of lobsters as being red!

Colour enhancers in fish food

There are four main groups of pigments (colour enhancers) that provide colour

in fish: melanins (black / brown), carotenoids (reds, oranges, yellows), pteridines (reds), and purines (reflective crystals). These pigments may be laid over eachother, or combined with proteins, to create the diverse range of colours seen in fish.

For most fish, the carotenoids are generally considered the most important pigments for enhancing colour (pteridines only have a minor role). This is because they cannot be produced internally and therefore must come from the diet. Carotenoids can be divided into carotenes (e.g. beta-carotene) and xanthophylls (e.g. lutein, astaxanthin, zeaxanthin). It is estimated that there are over 600 naturally occurring carotenoids produced by plants, algae, yeasts, and some bacteria. It is the xanthophylls that tend to be deposited in the skin to give the colours we see in fish.

Melanins and purines are less affected by the food we give our fish, although a complete diet is needed to ensure sufficient supply of materials to manufacture these pigments. For example, melanin, which is responsible for black/brown, is synthesised from an amino acid (component of protein) called tyrosine.

These colour enhancers must be delivered to fish via certain ingredients in their food. Some are particularly rich in carotenoids, for example shrimp meal, yeasts, paprika, and marigold meal. Man-made carotenoids are also available for inclusion in diets, in particular astaxanthin and canthaxanthin. Most complete foods will contain some colour enhancers, with increased levels found in special colour-enhancing diets.

How colour enhancers work

Different fish species vary in their ability to use colour enahncers. For example, the key red pigment that is found in erythrophores is astaxanthin. Carnivorous fish such as salmon need astaxanthin to be in their diet, so they can digest it and deposit it in the erythrophores. Other species, such as koi and goldfish, are more adaptable. They can convert simpler carotenoids to astaxanthin and other key pigments. For example, koi can take the zeaxanthin found in *Spirulina* and convert it to astaxanthin. For this reason *Spirulina* is a useful colour enhancer for koi but not for salmon. The ability of fish to convert pigments is related to the diet they have evolved to feed on in the wild. More herbivorous / omnivorous species are better at doing it, and this includes many tropical fish.

Ingredients are therefore selected for their content of key carotenoids, and the ability of the species to use them. Fish then digest these ingredients in the food, liberate the carotenoids and absorb them. They are then combined

with lipids (oils) and deposited in the chromatophores.

It is important to be aware that there is a limit to how much colour-enhancement is possible. Up to a point colouration will be improved, but above a certain level it is wasted. For example, trout diets will only contain around 40-50mg astaxanthin/kg to achieve appropriate colouration of the flesh.

Because of the huge number of species of tropical fish that we keep, it is not possible to carefully research the ability of each one to metabolise different pigments. Good quality colour-enhancing foods will therefore contain a good mixture of different pigment sources, which include the pigments that are directly deposited in the skin (e.g. astaxanthin).

Maintaining excellent colouration

In light of the biology of colour enhancement in fish, it is clearly vital that we feed the right diet to keep our fish looking their best. Most good quality staple diets will contain some colour enhancers, but you will need to check the claims on the pack to make sure of this. If however you want to really boost your fishes' colour, you should feed a special colour-enhancing food, such as TetraPro Colour. These diets will contain additional amounts of colour enhancers, and are ideal for feeding to new fish, or to fish that are particularly colourful.

It is also important to be aware of the wider picture though. The overall condition of the fish will also influence the quality of their colours. The intensity of colours will be affected by overall body condition (which is directly influenced by the rest of the diet) and stress. A common response to stress in many fish is for the colours to alter (for example dark areas may fade), and blood vessels may become visible in white areas. It is thus essential to keep the environment healthy and to feed a good quality diet.

Once you have selected the food you want to feed it is also important to store it correctly. As with some vitamins and fatty acids, pigments are sensitive to degradation if exposed to light, warmth and humidity. Therefore it is sensible to keep fish food food in a dry, cool, dark place.

Choose the right foods and keep your fish in good condition and you are well on your way to optimising their natural colouration.

THE CLOWN BOTIA HIDING IN MY POND

Clive Walford (ex member of Mid-Herts A.S)

A few months ago I decided to have a pond built in my front garden (the rear garden is only a small yard). A good neighbour suggested a pond builder and he was duly called upon.

He rode up to the house, tied his horse to the gate, removed his Stetson and six guns and started on the construction of the pond saying he guaranteed it would not leak but if it did he would put it right. It was not easy to get him to do what I wanted even to the choice of coloured paint to be used! He completed the job complaining that I was far too fussy and he knew what he was doing. After a couple of test fills it was found to be losing water. After I referred to his guarantee he wanted more money to carry out remedial work!! I won't go into details of my reply! He piddled about on the waterfall and then rode off into the sunset, never to be seen again, (I will refer to leakage later on). I was told later he had overcharged me so it is just as well he never reappeared!

The pond is only a small one constructed of brick and concrete 'carved' and painted to look like natural stone, (I leave you to be the judge of that.) with a small waterfall. He charged me £120 including a pump. I purchased a filter (uv included) and a bigger pump for another £100. The pond is 3 ½ to 4 square metres surface area and about 45 to 50 cm deep. A very

thin layer of gravel was spread over the bottom. A few water plants were added and it was time to add some fish.

8 fish were donated by my father-in-law from his pond (how could I refuse?) he had caught some from his local river.

Two salmon pink fish, variety unknown (4 inch) and six basically grey of various sizes (2 to 5 ins.). After 10 hours travel they settled in happily.

A visit to the local pet fish shop with my wife increased the occupants of the pond by 2- 6inch Golden Orfe (I think) 4 red/white 4 inch Koi, 2 black/white 4 inch Koi (probably wrongly named as I know nothing about pond fish (OK, I don't know much about tropical fish either!), 4 very small Platies, 2 weedy looking Swordtails and 2 Angelfish. Also a couple of 'cleaners', Common Plec or similar (later 3 more were added).

The Angelfish only lasted a couple of days and I was not surprised to see at the local shop that the tank holding a large number of Angelfish from which mine came, was empty! I am sure he had not sold them all!

A few weeks later we added 3 male blue Guppies - 2 disappeared after 3 days later. 3 more red Guppies were added

(survived) and 3 Clown Botias.

The Botias, after a mad dash around the pond, disappeared into the 'caves' and were not seen again for a week or so. 45 minutes after sending a desperate email to Dick Mills requesting help on how to induce the little b----- to show themselves, 2 appeared in the early evening for a minute and later a single one had a little look round the pond. Since then they have appeared for a short time each day for a few minutes! On just one occasion did we see all 3 out together. One is a loner but the other two do stick together most of the time. Lesson learned! Don't put Botia in a pond with big caves!

A few other odds and ends were added but the pond does not look over crowded. The guppies are 'lost' in the pond and the Angel fish seem a little intimidated by the big boys and do spend some time in hiding. These will be transferred to the aquarium when I do get round to installing one!

We were away for a week and on our return found a good number of baby Platys and one of the local river fish had a mouthful of babies as well. A mouthbreeder no less! She looked after them well and I suppose altogether we must have about 70 to 80 babies. None of the other fish seem interested in turning them into lunch!

Oh, I forgot to mention to you disbelievers of Botia in a pond, that I

now live in Bali Indonesia and the lowest temperature measured in the pond so far is 25 C.

Pump and filter keep the water very clear and the leak reduces the water by 2 to 3 cms every day (unless any of you are experts in hydraulics and can calculate the likely loss by evaporation where the temperature is mostly in the 28° to 33° range!!) So every day I top it up, which I consider is a good thing as I know in the aquarium, particularly for the Botia, 25% water change a week is recommended!

The aquarist is not well catered for here. I have only found 2 shops that sell fish and one pet market where birds, fish, owls, monkeys are sold. It is not a pretty sight. Animal rights don't exist here and the conditions the birds are kept in are very bad. There are a number of fish shops in the market but the selection of fish is very limited and their conditions would make you cry.

The local shop is very small and crammed with tanks, mostly over populated, and a few vats for the pond fish. Again the variety is a bit limited! I asked the assistant to pick me out a pair of Platys but he did not know the difference between male and female (huh, even I know that one). The fish are netted and then handled (not too gently) in being transferred to the plastic bag. You can't buy female Guppies here! The males are imported from Singapore. So if any one is visiting Bali please put a couple of good females (Guppies that is!) in your pocket for me!!

The third shop is much better and has a good selection of Koi but not much for the aquarium. There are not many plants available for the aquarium and those I tried in the pond make good eating for the fish.

It is very pleasant now as I can sit by the pond (keeping a good look out for Botia!) eating my breakfast, drinking my coffee and feeding the fish, just in my shorts all the year round!

Here is a good advert for Tetramin! I start feeding medium and small pellets for the bigger fish first and then feed crushed Tetramin to the babies in another part of the pond. Within seconds the other fish raid the babies feed. Quality counts!

It's too hot to sit there during the day even with a sun umbrella up. The sun sets the same time (6:30 ish) more or less all the year round so I am waiting for the electrician to put in some more sockets to enable me to have some illumination around and in the pond. Then in the cool (well around 28°C) of the evening I can sit with a nice cold beer and relax after a hard day doing nothing!

Well that my pond story. If you want to comment my email address is below. If you can give a name to the salmon pink fish and the bigger greyish one I would be pleased to hear. Sorry no prizes given!

Email: Clive_walford@yahoo.co.uk

Dear Friends! –

FESTIVAL of FISHKEEPING 2007

I am looking forward to welcoming you again this year to Mill Rythe for a weekend that I am sure you will enjoy. We have already arranged dates for your event in 2008, and for anyone who would like to book for next year whilst here this week-end, I would be pleased to offer a

£5 advance discount

off of the stated price. Just pop into the Show Hall and see GRACE who will be pleased to take your deposit and reserve your accommodation.

OTHER DISCOUNTS FOR 2008

What's more! - At some later date, should you decide to visit us for another break in 2008, I would be pleased to make the offer for yourselves and your family to enjoy another holiday with us at a discount of 15% ***off any brochured break!***

All you need to do for this offer is to call our booking hotline on:

02392 46 00 44

and quote **'Fish 07'**

I hope that you will be in a position to take up these offers. The team and myself look forward to seeing you back again at Mill Rythe next year.

Kindest regards

Phil Jarmyn

(The Fish-Keepers Friend)

OPEN CATFISH SHOW

AT

MILL RYTHE HOLIDAY VILLAGE
HAYLING ISLAND, PO11 0PB

ON

SATURDAY 13 OCTOBER 2007

LIST OF CLASSES

Gb (1)	*Loricaridae* (Up to 130mm)
Gb (2)	*Loricaridae* (Over 130mm)
Gc	*Mochokidae*
Gd	*Pimelodontidae*
Ge	*Bagridae*
G	AOV Catfish
Ha	*Brochis*
Hb	*Aspidoras*
H	*Corydoradinae* (other than Ha & Hb)
Ng	Pairs of Catfish
Nh	Pairs of *Coridoradinae*
Xg	Breeders Catfish
Xh	Breeders *Coridoradinae*

Judged to FBAS Rules

FOR A SCHEDULE WRITE TO:

Show Secretary:
Les Pearce
44 Weeks Road
RYDE
Isle of Wight
PO33 2TI

OR EMAIL:

lesjpearce@tiscali.co.uk

FESTIVAL OF FISHKEEPING 2007

NEW FOR THIS YEAR IS AN OPPORTUNITY FOR GUESTS WHO ARE STAYING FOR THE FESTIVAL WEEKEND TO SELL THEIR HOME BRED OR SURPLUS FISH STOCK.

WE WILL SET UP A SERIES OF 200mm x 200mm x 300mm TANKS WHICH WILL BE HEATED AND FILTERED FOR THE DURATION OF THE WEEKEND FOR STAYING GUESTS TO SELL THEIR SURPLUS STOCK. THIS STAND WILL BE MANNED BY FESTIVAL APPOINTED STAFF DURING THE PUBLIC OPENING HOURS OF THE SATURDAY AND THE SUNDAY.

NO COMMISSION WILL BE TAKEN BY THE FESTIVAL ORGANISERS. ALL PROCEEDS GO TO THE OWNER OF THE FISH. THE OWNER WILL BE RESPONSIBLE FOR THE WELL-BEING OF THEIR FISH AT ALL TIMES. FESTIVAL ORGANISERS WILL NOT BE RESPONSIBLE FOR THE LOSS OF ANY FISH FOR WHATEVER REASON.

ALL TANKS MUST BE PRE-BOOKED BY WEDNESDAY 3RD OCTOBER 2007. FOR BOOKING FORMS PLEASE CONTACT:

Paul Corbett,
The Orchard, Rectory Lane, Gatcombe, Isle of Wight, PO30 3EF
Telephone: 01983 721246 or 07721 965693

PLEASE NOTE THAT ONLY FISH OF A SIZE SUITABLE FOR THE ABOVE SIZED CONTAINERS WILL BE ALLOWED. LARGER FISH SUCH AS LARGE CATFISH, LARGE CICHLIDS, KOI, ETC CANNOT BE ACCOMMODATED. PLEASE ALSO NOTE THAT THIS OFFER IS OPEN ONLY TO PERSONS WHO ARE RESIDENT FOR THE WHOLE WEEKEND.

OPEN CATFISH SHOW

AT

MILL RYTHE HOLIDAY VILLAGE
HAYLING ISLAND, PO11 0PB

ON

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a continuous counterpart to the mouth as a whole. All this is covered by a median pad of less collagenous tissue. Within part of the mouth is a structure called the 'Umbrella Ribs'. These incorporate the mandibular barbels.

ILLUSTRATION 'B'

In Trewavas's work on *Fishes From West Cameroon*, she describes two Mungo species, *C. micropogon* (Poll, 1952) and *C. disneyi* which are described as new. David Sands' work, *Catfish of the World, Volume 2, 'Mochokidae'* does not list either species. Ethelwynn Trewavas records that the new Mungo *Chiloglanis* was named *disneyi* after the collector. Both species have the mandibular barbels almost entirely incorporated in the mouth, a row of minute ciliform teeth in the membrane behind the pre maxillary symphysis and very small mandibular teeth in comparison with several other species. The two species are distinguished from each other by the size of the eyes in the adults and the distance of the eye from the posterior nostril. Other notable distinguishing features are the shape of the caudal fin, more deeply forked in *C. micropogon* and also in dentition. The background colour of *C. micropogon* is yellow. The top of the head is irregularly clouded with dark grey. Behind this area are three black bands (dorsal area) which vary in width, these extend into the sides. A dark vertical streak is present at the base of the caudal. Also, a broad black band crosses each caudal lobe. Pelvic and anal fins are also lightly marked. The background colour is not recorded for *C. disneyi* except to mention markings on the body running together irregularly giving a generally dark colour above the flanks.

The specimens also had a dark band at the base of the caudal fin and another crossing all the rays. Trewavas also states that *C. disneyi* shows resemblances to four other species of *Chiloglanis*. These are *C. congicus* (Boulenger, 1920) caught at Stanley Falls; *C. marlieri* (Poll, 1952) found in a remote tributary of the Congo west of Lake Kivv; *C. poliodon* (Norman, 1932) found in the head waters of the River Bagbue in the former Sierra Leone and *C. lamottei* (Daget, 1948) found in Mont Nimba. All four species have a high number of mandibular teeth, a posteriorly placed pelvis and small eyes well separated from each other. Members of the genus are characterised by their flat body and well developed sucker mouth, this being well suited to their environment

of fast flowing rivers. The flow of water in their habitat is only broken by boulders and this increases the level of oxygen in the water.

Aquarists should handle these fish carefully because the dorsal and pectoral spines are needle sharp and can cause painful wounds. The mucous covering the spines contains an irritant as well as a chemical which retards the coagulation of blood.

In their natural habitat, *Chiloglanis* will feed on such items as midges, black fly larvae and mayfly nymphs. In the aquarium they will eat algae, bloodworm, and various types of flake food. Water conditions need to be neutral to alkaline, very well aerated and of a temperature in the low seventies degrees Farenheit. Power filtration is essential to create a flow of water and the substrate should be covered with round smooth hard stones.

Named Species from *Fishes of West Cameroon*	Named Species from *Catfish of the World (1983)*
CHILOGLANIS	CHILOGLANIS
batesii	anoterus
brevibarbis	batesii
congicus	brevibarbis
disneyi	cameronensis
lamottei	deckenii
marlieri	lukugae
micropogon	modjensis
niloticus waterloti	niloticus
polyodon	paratus
	pojeri
	pretoriae
	swierstrai

References:

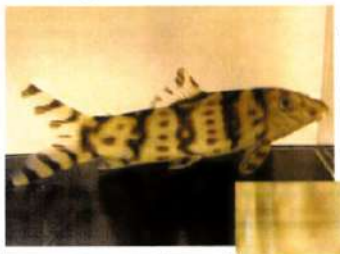
1) *Freshwater Fishes of West Cameroon.* British Museum (Natural History), 1974

2) *Catfishes of the World, Volume Two.* David Sands, 1984.

FBAS MIDDLESEX SHOW

Dick Mills

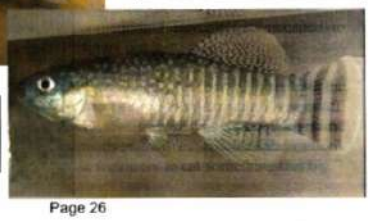
With the current general increase in entries at Open Shows, it came as no surprise to find that entries at this year's 'Middlesex Show' were satisfactorily elevated with no less than 240 entries being benched.



Left: Winner of Championship Class La - a *Botia histrionica* owned by John Egan of Port Talbot AS

Right: *Epalzeorhincus frenatum* owned by TDC, winner of Championship Class Ma

Left: John Egan's *Etheostoma caeruleum*, winner of Championship Class W



Right: Best in Show winner - *Aphanius dispar* owned by TDC

This was very gratifying, seeing as there was the usual 'competition' from a clashing Open Show on the same date despite the fact that Show dates are widely advertised moths in advance in the aquatic press and, of course, the comprehensive coverage provided on the FBAS website. It seems that some Show organisers simply do not want to co-operate to make it a date-clash free Show season.

Although the weather had been atrocious in the days leading up to the Show, most exhibitors found their journeys not too bad – even from far afield – and the diversity of fish on show was stunning. From the ubiquitous, albeit diminutive Galaxy Rasbora to the statuesque Discus the quality was equally superb. Any innocent, non-fishkeeping bystander could have only marvelled at the logistics in getting some of the fish on to the bench whether it be in sheer numbers (yes, TDC were there!) or in individual (huge Cichlids!) size.

Championship Trophy Classes included Loaches, AOS Egglayers and AOS Coldwater (which now include erstwhile tropicals such as White Cloud Mountain Minnows).

Port Talbot's John Egan fought off TDC's continuing advance on the Trophy Classes as two of his fish – a *Botia histrionica* and an *Etheostoma caeruleum* grabbed Classes La and W respectively.

But TDC retaliated by taking not only Class M with an *Epalzeorhynchos frenatum* but their *Aphanius dispar* also took Best in Show.

Grace Nethersell, ably assisted by Sylvie Anderson and Tina Doswell, kept the day-long refreshments coming and Brian Chittenden's handmade show tanks simply flew off the shelves.

Federation of British Aquatic Societies

FBAS

Founded 1938

'GLEE'FUL NEWS

Dick Mills

Each September, the GLEE Exhibition fills several Halls at Birmingham's BEC with every delight that the words 'Garden Leisure Equipment' can conjure up.

One popular Hall (OK, Halls 6-8!) was especially attractive to pet owners and the aquatics area more than others. Amongst all the exhibits our wandering reporters picked up one or two innovations.

The **RENA Smartheater** caught the eye with its totally different shape and stylish appearance.

Its design and performance were certainly new to the hobby. It's said to be unbreakable (no glass tube) and safe to touch (even when it's 'on.')

AN indicator light shows when the temperature is below or above that set by the fishkeeper. If it's above, then this may indicate a high ambient temperature in the fish-house, or maybe the tank is in direct sunlight for too long or that any metal halide lights are overheating the water.

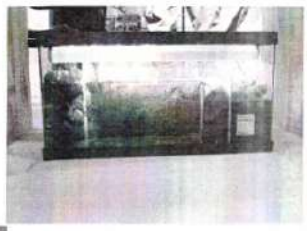
It can also be connect via a suitable adapter to any external filtration system.

Many visitors to Hampton Court Palace Flower Shows in past years have been disappointed to learn that the colourful Tropical Water lilies are not for our climate, but that has all changed with the introduction of the **THERMOPLANTER** from Anglo Aquarium Plants (see www.thermoplanter.co.uk)

Basically, this 'heater in a bucket' device keeps the soil around the water

lilies roots at the proper temperature. It is far cheaper than heating the pond (!) or even a greenhouse and it will aid over-wintering for those popular 'Lilies in a tub' species such as *N.pygmaea*.

Using the Thermoplanter will allow the stocking of tropical water lilies more practicable in our temperate climate.



You can see here how a suitable beneath the tank 'sump' accommodates the smaller Miracle Mud tank filled with Hornwort.

'Picture frame' tanks hung on walls are nothing new but we found this version fairly amusing. Using a river scene as a background, under certain conditions (when the fish swam in the right area) it looked as though Guppies and Platies were emulating Salmon by literally swimming upstream – otherwise it looked as though they were lounging on rocks or climbing trees!

Marine fishkeepers will be familiar with the **'Miracle Mud'** miniature filtration systems wherein macroalgae cultured in an outside 'hang-on' box under a miniature fluorescent lamp removed nitrates from the aquarium water.

In response to popular demand, this technology has been extended into freshwater areas with equipment available from Underworld Products.

Everyone knows that digging out a pond, or even a cascade, is hard work. Those clever people at ROCKWAYS obviously appreciated this and have come up with a design that needs no inground excavations.

Ideal for Patios and even decking, the compactness of the design has an extra feature – they're quite child-proof and safe.

Here you can see how the bottom unit is deep enough to house the circulating pump.

Considering the potential lethal combination of electricity and water, it was quite interesting to see the increase in underwater lighting effects whether it be in ponds, aquariums, large garden sculptures or the rather more understated water features such as these.

GLEE is held every year at the NEC and is principally a Trade Show but usually we manage to get our spies in to see what's new in the aquarium world and to meet up with our generous sponsors to discuss next year's Show demands!