FISHKEEPERS' AND WATER GARDENERS'

BULLETIN

VOLUME 6 ISSUE 7 PRICE £1.95 (UK)

WHITE OPAQUE HALF MOON FIGHTER

Picture by Dick Mills

See page 8

JOURNAL OF THE FEDERATION OF BRITISH AQUATIC SOCIETIES

www.fbas.co.uk

Dear Readers,

It has been a sad quarter with the lack of interest shown in the new Club News pages.

I would sincerely hope that this will not be the case for the December Bulletin. Please send your entries in by the 1st of October 2006. I did have photos from one show but sadly no write up.

We are fast approaching the finest Fishkeeping Festival in the Country. If you do not believe me! Come and see for yourself as a day visitor your entry is FREE!! There is plenty to see and many trade stands.

We have amongst the new items this year a display of "Corydoradinae" (Some 40 different pairs) also a display of "Moth Catfishes"

So do not miss out by either coming for the day FREE or a 2 night Weekend half board for £90.

See you there!

Peter Furze

Editor.

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UNDERSTANDING & IMPROVING FISH COLOURATION

Rupert Bridges (Tetra)

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 yellow, 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

DROPSY AND OTHER FORMS OF BLOATING IN FISH

Dr Peter Burgess (Senior Consultant to the Aquarian® Advisory Service)

Bloating manifests as an unnatural swelling of the fish's abdominal region. In some cases the head and upper body also swell up. There are several possible causes for this condition, including a bacterial or viral infection.

General investigations

Depending on the underlying cause, affected fish may exhibit other signs of ill-health in addition to abdominal swelling. These symptoms can provide diagnostic clues, so it is worth noting them down.

Establish how many fish are suffering from bloating. Typically, only a single fish is affected. Very occasionally, several individuals within the aquarium or pond may display this condition, in which case a serious viral or bacterial infection could be to blame.

If possible, examine the fish directly from above. This viewpoint will make it easier to tell whether the abdominal swelling affects one or both sides of the body. At the same time, check whether the scales are sticking out, giving an unnatural serrated ("pine-cone") appearance to the belly contour. Also determine whether the eyes are affected: certain forms of bloating may be accompanied by the bulging of both (sometimes just one) eyes.

Next consider whether the bloating has developed suddenly (eg within a few days) or over a period of weeks or months. If sudden, then this suggests an infection, perhaps caused by bacteria or viruses. If, however, the body has slowly become swollen then a tumour may be the cause. Of course, a female fish that is developing eggs or young may also become very plump, so rule out a possible pregnancy before considering a health problem!

Assess the bloated fish's general behaviour. Does it appear sluggish, and is it feeding?

Finally, as with any disease problem, perform water quality checks and assess the overall aquarium (or pond) hygiene. It is known that dirty water conditions may trigger internal bacterial infections that can lead to bloating.

Possible causes of bloating

(1) Dropsy

This is the build up of fluid (known as "ascites" or "ascitic fluid") within the fish's body cavity. The body may swell considerably in some cases. Usually, the swelling is symmetrical. Typically, the scales are raised and the eyes bulge. Affected fish may become sluggish and off their food. Dropsy is generally the result of an infection or damage to organs involved in osmoregulation (= the system by which fish maintain their internal salt and water balance). The kidney, for example, plays a major role in osmoregulation, hence kidney disease can lead to dropsy. Certain tumours can also cause symptoms of dropsy, as can organ failure perhaps due to old age.

Treatment: Not easy. By the time the

STAR GRASS (Heteranthera zosterifolia)

Caryl Simpson (Marlborough Aquarium Club)

First Published in *Aquarium World* (FNZAS) November 2004

This fast growing, bright green, undemanding plant comes from South America - Brazil, Bolivia, Paraguay, Uraguay and Argentina. It is also known as *Schollera zosterifolia* or *Heteranthera osteniana.*

Pictures © C. Dunaway

It is very brittle and requires frequent trimming of its tops to make the auxiliary buds branch out. It is these branches that give the plant its name as the end of each shoot looks like a star. It will grow up to a metre in length.

Star grass likes a pH of 6.5 - 7.5, a hardness of 30 - 140ppm and a temperature of 18 - 30·C. It can be used as a midground or foregound as long as you keep it trimmed. If you keep it cut to about 5cm in the foreground, side shoots will develop

forming a rich green carpet. Planted mid-tank it is good for hiding the bare stems of plants behind it.

Generous and diffused lighting is required to keep this plant at its best. Propagation is by cuttings. Plant only the tops of branches in clusters, preferably in sandy loam in the spring season. Having said that, mine was sent to me at the beginning of winter I and was planted into gravel with no adverse affects.

Lazarus Miskowski made the following observations in www.thekrib.com.

He found star grass tended to do poorly (temporarily) if light levels were suddenly increased. It burned out but ' would then come back. It would grow more compactly under high light.

He also discovered it didn't do so well with swordtails in the tank as they seemed to enjoy munching on the new shoots creating a very tatty appearance.

If the plant develops black edges it indicates some sort of nutrient problem.

In some of his tanks he noticed green and white striations that also looked to be a sign of nutrient deficiency.
He wondered if the plant competed poorly for micronutrients at higher light levels. Another tank in which he fertilised sparingly had never showed these striations.

He also said that the tank in question had gravel while the other tank, without the problem, used laterite and put forward the suggestion that maybe the laterite was adding extra iron.

This pretty plant would make a welcome addition to any tank.

References:

FNZAS Plant Survey
www.thekrib.com,
www.plantgeek.com

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Aquarium World Magazine

NEW FBAS FIGHTER GUIDES

The following pages contain the new fighter (*Betta splendens*) guides which will now come into effect to assist the judging of fighters in FBAS class Ea.

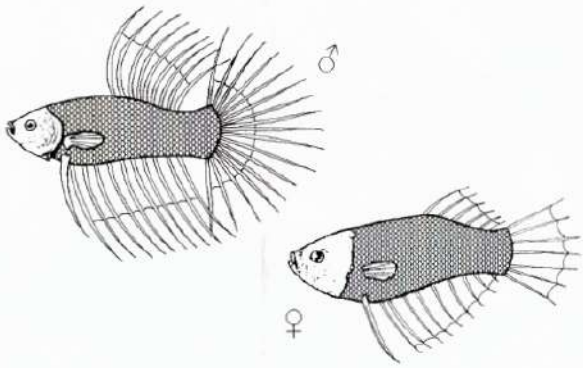
More and more we are seeing these newer varieties appearing on the bench and it is time that this is recognised.

It must be stressed that, at this time, these are being referred to as guides and not standards and they will be printed on yellow paper to show this. As more experience of these varieties is gained these guides may be subject to alteration. The addition of other varieties is also a possibility.

Constructive feedback on these is always welcome.

BETTA SPLENDENS. Regan.

Crown Variety

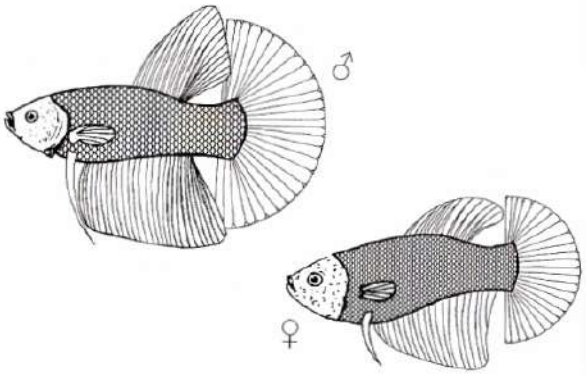


MALE: The caudal fin rays to extend to a minimum of 1¼ times the length of the length of the fin membrane. Dorsal and anal fin rays to extend a maximum of the same length of their fin membrane. The perimeter of the rays of the dorsal and anal fins to form a pleasing curve. The perimeter of the rays of the caudal fin to form a semi-circle. All fins to be carried erect. Caudal peduncle to be capable of carrying the caudal fin.

FEMALE: The caudal fin to be smaller than that of the male, forming more like a delta shape. Dorsal, anal and ventral fins are also shorter. Fin membrane to cover a minimum of three quarters the length of the fins. Caudal peduncle to be narrower than the male. All fins to be carried erect.

BETTA SPLENDENS. Regan.

Half Moon Variety



MALE: The caudal fin to form a semi-circle with the diameter edge to be as straight as possible. Upper and lower diameter edges to be in line with each other. Caudal diameter to be less than the extremities of the top of the dorsal fin and the bottom of the anal fin. Fin rays of the caudal must not protrude beyond the perimeter edge of the fin. Dorsal and anal fins to be as the guide drawing. All fins to be carried erect. Caudal peduncle to be capable of carrying the caudal fin.

FEMALE: As the male except that the caudal fin diameter to be less than three times the depth of the caudal peduncle. Dorsal, anal and ventral fins to be smaller than those of the male and as per the guide drawing. Caudal peduncle to be narrower than that of the male. All fins to be carried erect.

BLAGDON

PRESS RELEASE

DATE: 30.05.06

PRODUCT TITLE: Creating clear water and beauty with the **Minipond Duo**

Consumer Press

Sit back this summer and enjoy crystal clear water in your pond. Be captivated by stunning fountain displays and listen to the soothing movement of water. By combining the Minipond 2000 pump and the Minipond filter, Blagdon have created the ideal partnership to help you achieve your dream pond.

Because the pump produces continuous beautiful fountain displays and the filter works relentlessly to maintain a healthy, clean pond, you will have everything you need to achieve clear water and beauty.

Ergonomic design features in both products make installation easy. The filters replacement cartridges and integrated UV clarifier will give you uncompromised and continued clear and healthy water. The hinged lid allows easy access for cleaning whilst the unique 5 stage design provides you with very low maintenance. The Minipond 2000 is the third model to come from the ever popular Minipond range of pumps. The four stunning fountain heads will give you a grand display of your choice. The pump itself is both substantial and durable. At the pumps heart, there is a high performance impellor and a hard wearing ceramic shaft. It has a T piece with adjustable flow controls which feeds both the fountain and filter. In addition the Minipond pumps well designed cage significantly reduces maintenance and cleaning. The Minipond 2000 pump and Minipond filter are the perfect partners and come to you courtesy of Blagdon the 'Pond Masters'. Available in two sizes Minipond Duo System 4500 5w MRRP £179.99 and the Minipond Duo System 6000 9w MRRP £189.99.

For all your pond information and to find out how to enter some great competitions with fantastic prizes during 2006 – visit the new Blagdon Website www.blagdonthepondmasters.co.uk

THE POND MASTERS

DRAMATIC PERFORMERS

Les Holliday (Hagen)

Keeping fish has come a long way since the goldfish bowl days and as aquarium keeping becomes more and more sophisticated the demand for excellence in areas such as filtration and water treatment have perhaps developed the most. Now high levels of water quality are not just the aim of the specialist expert aquarist but the norm for most hobbyists who wish to have clean and safe aquarium conditions. These aims, therefore, have been paramount in evolving the new Fluval Lab Series of filtration media which has been developed by Hagen for both expert aquarists and also well-

suited to building a solid base of new hobbyists as more and more enthusiasts will have greater success in keeping fish within healthier aquariums.

Developed at HARS (Hagen Aquatic Research Station) the Fluval Lab Series of premium grade medias incorporates some of the highest grade laboratory resins available to combat the main causes leading to a deterioration in water quality. Of these an accumulation of nitrate is probably the most common. Present in variable quantities in all aquariums nitrate build-up is the end product of nitrification the process where bacteria converts nitrogen rich organic matter into ammonium, then nitrite and finally nitrate. The main source contributing to nitrate accumulation being, of course, the protein rich foods added to the aquarium for the benefit of the fish.

Unfiltered tap water used to fill the tank and topping up for evaporation losses may, however, also contain significant amounts of nitrate in some areas of the country and regular additions can soon produce quite high accumulations. Recent research also has identified that a natural process called nitrogen fixation can be a contributing factor. Nitrogen fixation occurs when Cynobacteria fix (gather and incorporate in their cells) dissolved nitrogen gas which enters the aquarium through the water surface. The Cynobacteria then release this nitrogen as ammonium directly when they die and decompose or indirectly when they are eaten by herbivores.

High levels of nitrate promote the uncontrolled growth of algae and several studies also confirm that concentrations of nitrate considerably increase stress and reduce the capacity to resist several diseases in numerous species of fresh water fish. In marine aquariums nitrate depletes the alkalinity and lowers pH and can lead to corals and clams suffering from deficiencies in calcium, and iodine. In order to maintain optimal water conditions it's recommended that nitrate levels are not allowed to increase over 20mg/l in freshwater aquariums and in marine systems no more than 5mg/l.

Fluval Lab series Nitrate Remover is derived from high-grade ion specific exchange resin and rapidly, selectively removes nitrate and eliminates toxic

nitrite in a matter of hours. This high capacity resin contains no phosphates will not affect pH in your aquarium and can be regenerated using iodine free aquarium salt. The current formulation is for fresh water aquarium use only.

Phosphates and silicates accumulations can also cause problems and are often present in the mains water supply. The main source of phosphates in the aquarium, however, derives from fish waste, specifically the undigested phosphorus content. When this phosphorus is released into the water, it combines with oxygen to form phosphates.

Elevated levels of phosphate fuel unwanted algae growth and in marine aquariums interfere with the ability of corals to efficiently absorb the calcium they require to grow and reproduce. As tiny amounts can encourage algal blooms it is recommended that phosphate levels be maintained below

0.1mg/l in freshwater aquariums and 0.045mg/l in marine systems. Silicates also can often cause blooms of types of algal called diatoms and its best not to allow silicate levels to increase over 2 – 3mg/l either in freshwater or marine systems.

Fluval Lab Series Phosphate Remover readily adsorbs phosphate, silicate and organic compounds without leaching adsorbed substances and can remove up to 20mg/l of phosphate per 40 gal (189 ltrs). This product will not affect pH or water hardness and can be used both in fresh and saltwater aquariums.

The third item in the new Fluval Lab Series range is Opti-Carb, a high capacity exchange media. Activated Carbon is a well-known adsorbing agent that can be used to remove toxic metals and other compounds. Opti-Carb is a mix of ion exchange and synthetic organic removal resins combined with research grade carbon to create a powerful adsorbent water polishing media. It offers superior rapid reduction of dissolved organic matter, removal of proteins (before they break down into toxic compounds), eliminates odours and discoloration and used on a daily basis will result in sparkling clear aquarium water. Opti-Carb can also be used as a spot treatment to remove specific toxic metals and compounds without affecting pH, KH or General Hardness. Formulated for reef aquariums and excellent for use in fresh or saltwater aquariums.

Festival Evening Entertainment Programme

Cabaret Show Time

Friday 6th October

First Class Entertainment

"Positive Culture"

from Kenya with their amazing

Fire & Air Show

Saturday 7th October

The Fabulous

ABBA REUNION

plus

Late night Adult Comedian

in Hudsons Bar

Mickey Zaney

Sunday 8th October

Cabaret Show Time

Please note this page should have been used for your club or society news
However this quarter no club took the challenge !!!!

VERY FISHY LAWS

As we all know, there are some very strange laws and by-laws around in this world. Here are a few of the more obscure laws regarding fish.

Did you know that there is an actual law in Idaho, USA that states: "You can not fish for trout from the back of a giraffe"

Some time ago a law was passed declaring "It is Illegal to lasso a fish" in Knoxville, Tennessee, United States.

In Ohio it is illegal to get a fish drunk. It is also illegal there to fish for whales on a Sunday.

Politicians in Australia have been pondering the meaning of "fish" and have passed new laws making it clear crocodiles should be fish too.

In Minnesota, it is illegal for any man to have sexual intercourse with a live fish. (Apparently it is OK for a woman.)

It's against the law to catch fish with your bare hands in Kansas.

Wearing pyjamas while fishing is prohibited in Chicago.

In Maryland, oysters are protected by law from being mistreated.

In the state of Washington, it's illegal to catch a fish by throwing a rock at it.

No person may carry a fish into a bar in Portola, California, United States

Topless saleswomen are legal in Liverpool - but only in a tropical fish shop.

In Athens-Clarke County, Georgia, United States, goldfish may not be given away to entice someone to enter a game of bingo.

Chasing fish in a city park is against the law in New Orleans, Louisiana.

In Portola, California it is illegal to fish from an overpass in the city.

In Oklahoma and Seattle, Washington it is illegal to carry a fish bowl or aquarium onto a public bus because the sound of the splashing water may disturb other passengers.

IF YOU WOULD SOONER SEE SOMETHING ELSE ON THIS PAGE THEN LET US HAVE YOUR SOCIETY OR CLUB NEWS – WE CANNOT PUBLISH IT IF YOU DON'T SEND IT IN!

KNOW YOUR FISH

Archer Fish - *Toxotes jaculatrix* (Pallas, 1767)

Common Name:	Archer Fish
Scientific Name:	*Toxotes jaculatrix*
Synonyms:	*Toxotes jaculator, Sciaena jaculatrix.*
Where found:	Asia and Oceania: India eastward to the Philippines, and south to Indonesia, Vanuatu, Solomon Islands, Papua New Guinea, and northern Australia.
Characteristics:	Body white to tan sometimes with a silver sheen. Shading darker towards the dorsal contour. Four or five dark brown to black bars are present, the foremost of which crosses the eye. Dorsal, anal and pelvic fins are dusky, caudal pale to dusky, pectoral fins are clear.
Remarks:	This is the most widely distributed member of the genus. Dorsal fin with four or five hard rays, the third being the longest.
FBAS Show Class:	'M'

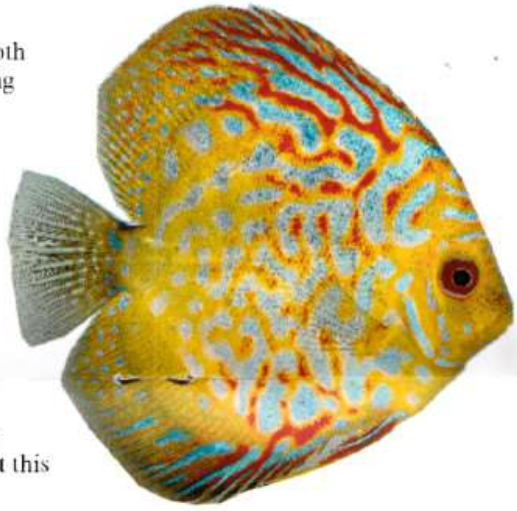
Festival of Fishkeeping & Water Gardening Weekend

PLUS NEW FOR 2006 - OPEN BOWLS COMPETITION!

October 6-8, 2006 at Mill Rythe Holiday Village, Hayling Island, Hampshire

A host of exciting attractions for both residents and day visitors, including everything you need to know about:

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



The water for the Discus will be provided by RO Man and AllClear will provide the water for the Koi at this year's Festival.

This year's events:

- 'Hagen Masters' Open Show (on Sunday – sponsored by Rolf C. Hagen)
- The Laguna Southern Koi Festival (sponsored by Laguna)
- Goldfish Society of Great Britain Fish Show (on Saturday – sponsored by Aquarian)
- British Open Final (on Saturday – sponsored by Tetra)
- The FBAS 'Supreme Championship' Final (on Sunday – sponsored by Tetra)
- Catfish Show (on Saturday – sponsored by Aquarian; Southern Catfish Rescue Society Rules)
- 'Jinchu Kai' – UK Ranchu Specialist Goldfish (sponsored by Aquarian)
- UK Discus Show (sponsored by Tetra)
- Society-furnished aquaria
- Your chance to meet some of PFK's Ask the Experts team (on Sunday).
- Speakers from the aquatic and water gardening worlds.
- Furnished aquariums, pond and water garden displays, trade displays.
- Your chance to vote for your favourite photos in the PFK photography competition.

Neil Hepworth

practical fishkeeping MAGAZINE

www.practicalfishkeeping.co.uk

Prices

Half-board

Two-night weekend £90
Three-night weekend £110
Lunch available both days
Cabaret entertainment, fancy dress competition and dancing on all three nights.

Hotline bookings: Please contact Grace Nethersell, 8 Acacia Avenue, Brentford, Middlesex TW8 8NR. Tel. 0208 847 3586.

Day visitors

Day visitors are welcome on Saturday, October 7, and Sunday, October 8, 10am-5pm. Entrance free: sponsored by Aquarian.

YOUR QUESTIONS ANSWERED

A Selection of Questions and Answers From the FBAS Website

I'm puzzled. I've read in the aquarium books about an undergravel filter but I can't imagine how it works or how you even get a filter under the gravel to start with.

Can you explain, and do they work?
John

First of all you must understand that whilst a certain amount of hardware is necessary, the u/g filter isn't a case of fitting a filter box under the substrate. The 'filtration' it offers is more a purification process than a store-the-dirt-in-a-box idea.

All the hardware does is maintain a current of water to travel through the gravel (both upward and downward systems are possible). The oxygen in this current of water sustains colonies of bacteria which, in succession, convert toxic ammonia first into even less toxic nitrite, then into nitrate.
Many freshwater aquarists feel that such systems adversely affect plant growth but, for many years, in marine aquariums where aquatic plants are few, this was the recommended method of keeping ammonia-based compounds down to a minimum. In recent years, the advent of Living Rock coupled with protein skimming has made the undergravel filter system redundant and the need for deep substrates.

I have a sucker cleaning fish and it has holes in the fins, why is this? Is it sick?

Holes in fins can be due to several causes.

One often unsuspected cause is not due to disease at all, but other occupants of the tank. Some fish have a habit of biting the fins of resting fish, usually overnight. The Yellow Tetra , *Hyphessobrycon bifasciatus*; is a good example of this and many a *Corydoras* catfish has awoken to find its fins have been attacked. Large Suckermouth Catfish are obviously at risk. Damaged fins can also be due to fighting amongst fish, but these splits usually regenerate quite quickly. Where they do not do so, and if they develop fungus growths on the splits, then water quality should be examined. 'Fin Rot' is not a disease in itself but a secondary one, where infection has been encouraged by poor water conditions.

A proper diet is very important in maintaining the fish's immune system; if by 'sucker cleaning fish' you mean an algae eating species, then it is important that they are provided a suitable diet containing vegetable matter. They most certainly need this once they've done the job of cleaning up your aquarium.

I noticed last night that my Plec seems to have changed. He no longer is fully brown with his odd spots and it looks like he has lost part of his skin (or whatever top part of their body is). The only conclusion I have come to is that perhaps my Tiger Barbs have had a go at him when I have dropped a tablet for him to eat at night as they do tend to kind of fight for it and the Plec gets his way so they can't get to it. Do you have any other solutions as to this problem as I have never seen it before.
Ashleigh

All manner of things can happen during the night and it is not unusual for some fish to emerge into the daylight with bits of fins missing. The problem is finding the culprit, of course, and this can throw up some unsuspected results. The Yellow Tetra, *Hyphessobrycon bisfasciatus*, for instance is a good example having been known to tear off all the dorsal fins of Corydoras Catfish in its tank. Your Tiger Barbs may well be the culprits but there could be another explanation: if, in his actions the Plec tries to escape the attentions of the Tigers, he may well attempt to hide from them underneath something - have you thought it might be burns from an unguarded heater or scratches from some sharp rockwork? Just a thought.

You might try feeding a less localised (but still fast-sinking) food after lights-out. Granules or 'wafers' might spread the other fishes' attention away for long enough for the Plec to get his midnight feast in peace.

Hello,
I hope you can answer my question. I have just finished re-lining my new pond, before I put paving slabs down the PH level was 7.5, when I added the slabs a small chunk of mortar went in to water, now the pH level is nearly 9.0.!! I have added Water plants on Saturday (lily plant, oxygenating weed & some reeds) but the pH has not changed. Do you sell a product that will reduce the pH level to 7.5 - and how much? Kind Regards Ben.

Don't panic Ben!
pH is a variable through the day and naturally changes from early morning to late evening due to the action of the plants taking out the carbon dioxide in the water (making the pH rise); when testing pH you should always do it at the same time of day to allow for this.

It is odd that a small piece of mortar should raise the pH so much. It is assumed that you relined the pond with a flexible liner, as opposed to re-rendering the pond walls. In the latter case, the rendering will have needed to be sealed (with something like G4) to stop any lime in the rendering leaching out into the water. The plants you added recently won't have had time to alter the water condtions as they will take a few weeks (and no little sunshine) to become established and growing strongly.

Changing the pH of a pond by adding pH adjusters could be an expensive business. The quickest way for you to get the pH back towards its earlier value would be to flush the pond through with a hose. If the pH is still high then you should check the pH value of the tapwater to start with - it may be higher than you suspect.

This was another page set aside for your Club News which sadly failed to materialize.
Your entry for December should reach me by the 1st October 2006 - Ed.

PASS THE SALT

Dick Mills

Salt may be bad for us humans but it can be both a lifesaver and a useful material to have where fishkeeping is concerned.

All you've got to remember is to use sea-salt (rock salt) or cooking salt, rather than table salt which contains anti-clogging agents (magnesium etc) that should not be introduced into the aquarium.

Use it as a prophylactic treatment, as a general 'pick me up' or a simple treatment for many parasitic diseases as follows:

COOKING SALT:
A 2% solution = 20 grammes per litre of water. Immerse fish for 8 hours. Remove sooner if fish shows distress. Raise temperature, supply aeration.

7 day treatment programme:
1st day 7gm of salt per litre.
2nd day drain 50% of the water and top up with fresh water containing 11gm salt per litre.
3rd day drain 50% top up with fresh water with 13gm of salt perlitre.
4th day top up 50% fresh water with 17gm of salt a litre, raise temperature and aerate.
Repeat after 7 days if necessary.

FOR BRINE SHRIMP HATCHING
25 parts per thousand (ppt) salt solution (approximately 1½ tablespoons of salt per litre) of water. This equates to around 1.018 specific gravity as measured with a hydrometer.

BRACKISH WATER TANKS
Some species of fish inhabit estuarine waters which are partly saltwater, partly freshwater depending on tidal conditions. Monos, Seats, Gobies, Archerfish are typical examples as may be other species that inhabit coastal mangrove swamps. The Orange Chromide (one of Asia's few native cichlids) is another possible salt addict.

Some plants may not take too kindly to salt in the water although it is reported that *Vallisneria* and *Sagittaria* are salt-tolerant.

So what is 'brackish'?

The obvious answer is anything about halfway between fresh and full strength sea water, although the consensus is something less 'strong'.

Around 1.005 to 1.010 S.G is the usual agreed range as some freshwater fish may struggle with salinities at the higher level.

DOUBLE CENTURY AT THE MIDDLESEX

Dick Mills

Despite the heat, the car park at the Rose Community Centre was packed as fishkeepers piled in to support 'The FBAS Middlesex Show'.

Windows and doors were wide open to encourage fan-assisted air-flow past the 200 or so entries benched. Extra aeration and filtration provisions were on hand bearing in mind the lower water oxygen content due to the high ambient temperature.

A most notable feature were two Discus fish entered into one of the four FBAS Championship Trophy Classes - how often do these magnificent fish see the light of day except in Specialist Shows? Well done to their owners for letting us see them!

All present were delighted to see the return of Alan Henderson to the ranks of 'officaldom' once more following his recent health worries.

Another happy event was the announcement that this was to be a VIRTUALLY FREE DAY - no entry fees and all the refreshments you wanted - although you had to buy Raffle tickets!

There were the 'Goodie Bags' for all visitors, exhibitors and non-exhibitors alike, plus the rewards for the winning entries all thanks to the generosity of the Federation's sponsors, Rolf C Hagen, Aquarian and Tetra.

Prize-giving was a doddle, none of the standing in line through seemingly endless Classes, each exhibitor simply received Award Cards bagged up with their accumulated rewards in one trip to shake the hand of FBAS Chairman, Les Pearce.

The organisers would take a moment here to say a very sincere 'THANK YOU' to all exhibitors for NOT rushing to debench until after prizegiving was completed.

It made such a difference to allow each exhibitor to enjoy their moment of fame, generously applauded by their previous opponents, without having to wade through buckets, polystyrene boxes and fishkeepers anxious to join the homeward traffic.

This display of good manners not only helped cut down presentation time but also contributed much towards ensuring that the day ended on a very happy note.

Photographs by Peter Furze and Dick Mills.

Windows and doors were wide open to encourage fan-assisted air-flow past the 200 or so entries benched. Extra aeration and filtration provisions were on hand bearing in mind the lower water oxygen content due to the high ambient temperature.

Rod Isted and Eric Franklin worry whether one of John Egan's fish has escaped

There were the 'Goodie Bags' for all visitors, exhibitors and non-exhibitors alike plus the rewards for the winning entries all thanks to the generosity of the Federation's sponsors, Rolf C Hagen, Aquarian and Tetra.

DOUBLE CENTURY AT THE MIDDLESEX

Dick Mills

Despite the heat, the car park at the Rose Community Centre was packed as fishkeepers piled in to support 'The FBAS Middlesex Show'.

Windows and doors were wide open to encourage fan-assisted air-flow past the 200 or so entries benched. Extra aeration and filtration provisions were on hand bearing in mind the lower water oxygen content due to the high ambient temperature.

A most notable feature were two Discus fish entered into one of the four FBAS Championship Trophy Classes - how often do these magnificent fish see the light of day except in Specialist Shows? Well done to their owners for letting us see them!

All present were delighted to see the return of Alan Henderson to the ranks of 'officaldom' once more following his recent health worries.

Another happy event was the announcement that this was to be a VIRTUALLY FREE DAY - no entry fees and all the refreshments you wanted - although you had to buy Raffle tickets!

There were the 'Goodie Bags' for all visitors, exhibitors and non-exhibitors alike, plus the rewards for the winning entries all thanks to the generosity of the Federation's sponsors, Rolf C Hagen, Aquarian and Tetra.

Prize-giving was a doddle, none of the standing in line through seemingly endless Classes, each exhibitor simply received Award Cards bagged up with their accumulated rewards in one trip to shake the hand of FBAS Chairman, Les Pearce.

The organisers would take a moment here to say a very sincere 'THANK YOU' to all exhibitors for NOT rushing to debench until after prizegiving was completed.

It made such a difference to allow each exhibitor to enjoy their moment of fame, generously applauded by their previous opponents, without having to wade through buckets, polystyrene boxes and fishkeepers anxious to join the homeward traffic.

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DEFRA LISTED SPECIES

The following is a list of species which require a licence to keep in England. This list is for information only and if you are in any doubt whatsoever, it is best to contact DEFRA and enquire. Further information can be obtained on the Internet by visiting the following link:

http://www.defra.gov.uk/fish/freshwater/nonnative.htm#SPECIES

SPECIES ALREADY ON THE LIST FOR ENGLAND

Abramis ballerus	Blue Bream
Acipenser sp., Huso sp. Scaphirhynchus sp. Pseudoscaphirhynchus sp. and hybrids	} Starlets and } Sturgeons }
Alburnoides bipunctatus	Schneider
Ambloplites rupestris	Rock Bass
Ameiurus sp.	Coldwater Ameiurid catfishes, including the Bullhead, *Ameirus nebulosus*
Aspius aspius	Asp
Chalcalburnus chalcoides	Danubian Bleak
Chondrostoma nasus	Nase
Chondrostoma toxostoma	Toxostome or French Nase
Ctenopharyngodon idella	Grass Carp
Hypophthalmichthys molitrix	Silver Carp
Ictalurus sp.	Coldwater Ictalurid catfishes, including the Channel Catfish, *Ictalurus punctatus*
Leuciscus souffia	Blageon
Lota lota	Burbot
Micropterus salmoides	Large-mouthed Bass
Mylopharyngodon piceus	Black or Snail-eating Carp
Oncorhynchus mykiss	Rainbow Trout or Steelhead
Oncorhynchus sp.	Pacific Trout
Polyodon spathula and *Psephurus gladius*	Paddlefishes
Pseudorasbora parva	Clicker Barb or Topmouth Gudgeon
Rhodeus sericeus	Bitterling
Salmo salar	Non-anadromous, landlocked Salmon
Silurus sp.	Coldwater Silurid catfishes including the Wels, *Silurus glanis*
Stizostedion sp.	Zander
Vimba vimba	Vimba

E&OE

AMENDED LIST FOR ENGLAND

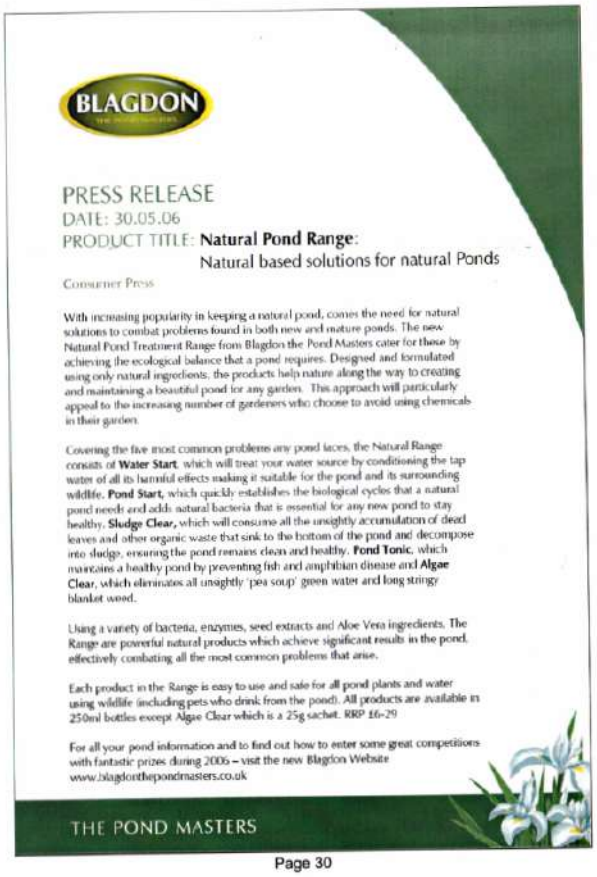
Barbus sp.	Barbel species, excluding the native *Barbus barbus*
Catostomus commersoni	Common White Sucker
Channa argus	Northern Snakehead
Coregonus sp.	Whitefishes, excluding the native species *C. lavaretus* and *C. Albula*
Cycleptus elongatus	Blue Sucker
Cyprinella (Notropsis) lutrensis	Red Shiner or Rainbow Dace
Esox sp.	Pikes, excluding the native E. Lucius
Hucho sp.	Danubian Salmon or Taimen
Lepomis sp.	Pumpkinseeds, Sunfish, Sunbass, Crappies, Bluegills and other *Lepomis* species.
Leucaspius delineatus	Motherless Minnow
Misgurnus fossilis	Weather Loach
Morone sp.	Striped bass, White Bass and Morone hybrids
Myxocyprinus asiaticus	Chinese Sailfin Sucker
Perca sp.	Perch species excluding the native *P. Fluviatilis*
Phoxinus (Chrosomus) eos	Northern Red-belly Dace
Phoxinus (C.) erythrogaster	Southern Red-belly Dace
Pimephales promelas	Rosy Red Minnow or Fathead Minnow
Rhinichthys atratulus	Blacknose Dace
Salmo marmoratus	Marbled Trout
Salvelinus sp.	Charr species, including the American Brook Trout, but excluding the native *Salvelinus alpinus*
Umbra krameri	European Mudminnow
Umbra pygmaea	Eastern Mudminnow
Zacco platypus	Pale Chub

E&OE

Application forms for the keeping and/or release of non-native fish can be obtained from:
Centre for Environment, Fisheries & Aquaculture Science (CEFAS)
Fish Health Inspectorate, Weymouth Laboratory,
The Nothe, Weymouth, Dorset DT4 8UB.
Tel: 01305 206673/6674; Fax: 01305 206602
Email: ***fish.health.inspectorate@cefas.co.uk***.

or from the Defra forms pages.

Application for a licence to be issued under the Import of Fish (England & Wales) Act 1980 and/or the Wildlife and Countryside Act 1981



BLAGDON

PRESS RELEASE
DATE: 30.05.06
PRODUCT TITLE: **Natural Pond Range**:
Natural based solutions for natural Ponds

Consumer Press

With increasing popularity in keeping a natural pond, comes the need for natural solutions to combat problems found in both new and mature ponds. The new Natural Pond Treatment Range from Blagdon the Pond Masters cater for these by achieving the ecological balance that a pond requires. Designed and formulated using only natural ingredients, the products help nature along the way to creating and maintaining a beautiful pond for any garden. This approach will particularly appeal to the increasing number of gardeners who choose to avoid using chemicals in their garden.

Covering the five most common problems any pond faces, the Natural Range consists of **Water Start**, which will treat your water source by conditioning the tap water of all its harmful effects making it suitable for the pond and its surrounding wildlife. **Pond Start,** which quickly establishes the biological cycles that a natural pond needs and adds natural bacteria that is essential for any new pond to stay healthy. **Sludge Clear,** which will consume all the unsightly accumulation of dead leaves and other organic waste that sink to the bottom of the pond and decompose into sludge, ensuring the pond remains clean and healthy. **Pond Tonic**, which maintains a healthy pond by preventing fish and amphibian disease and **Algae Clear**, which eliminates all unsightly 'pea soup' green water and long stringy blanket weed.

Using a variety of bacteria, enzymes, seed extracts and Aloe Vera ingredients. The Range are powerful natural products which achieve significant results in the pond, effectively combating all the most common problems that arise.

Each product in the Range is easy to use and safe for all pond plants and water using wildlife (including pets who drink from the pond). All products are available in 250ml bottles except Algae Clear which is a 25g sachet. RRP £6-29

For all your pond information and to find out how to enter some great competitions with fantastic prizes during 2006 – visit the new Blagdon Website www.blagdonthepondmasters.co.uk

THE POND MASTERS

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, such as TetraPro Colour, 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. All Tetra foods contain some colour enhancers, but if you want to really boost your fishes' colour you should feed a special colour-enhancing food such as TetraPro Colour or TetraRuby. These diets contain additional amounts of colour enhancers, and are ideal for feeding to new fish, or to fish that are particularly colourful (e.g. rainbows, some African cichlids etc). In addition to enhancing colour, these diets also provide all of your fishes' other nutritional requirements.

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.

symptoms are evident, considerable internal damage may have already occurred. If dropsy has occurred rapidly then suspect a bacterial infection and treat the fish (ideally in isolation) with a wide-spectrum bacteria remedy. The herbal-based fungus remedy, Pimafix, is also effective against certain internal bacterial infections, so may be worth a try. In many cases of bacterial dropsy, antibiotics offer the best chance of a cure, but that means a trip to the vet. If viruses are to blame then no drugs, including antibiotics, will have any effect. With largish fish, such as koi, the vet may wish to "tap off" some of the fluid to check for the presence of blood or bacteria.

(2) Tumour

Internal tumours occasionally develop in fish. These include tumours of the kidney, pancreas, and liver. Tumours of the reproductive organs (gonadal tumours) may also occur. Tumours can affect any species of fish and at any age. However, very old fish seem more prone, due to their weakening immune systems. In all probability, only a single fish will be affected, as tumours are not infectious. Inspect the fish for any asymmetry to the abdominal swelling which might suggest a tumour. For example there may be a discrete bulge on one side of the body only, or the swelling may be localised, perhaps appearing as a lump.

Treatment: Internal tumours are hard to diagnose on live fish and virtually impossible to cure. If in doubt, you may wish to find a vet who is willing to examine the fish. Assuming the fish is relatively large, the vet can gain clues by gently feeling (palpating) the swelling: this can be very informative, enabling the vet to gauge the texture (eg solid or fluid filled) and distribution of the swollen area – which may help in diagnosis. Imaging techniques such as radiography (X-ray) and ultrasonography (ultrasound) have also been used on large fish such as koi to investigate internal tumours and other disorders. Surgical removal of the tumour may be possible in some cases, as has been carried out on koi and other large species. In situations where an inoperable tumour is thought to be harming the fish then euthanasia is the only humane option.

(3) Swim bladder disorder

The swim bladder is a gas-filled buoyancy organ. Should the swim bladder become infected it may over-inflate with gas, or fill with fluid. In extreme cases the unnaturally enlarged swim-bladder may cause the fish's belly region to bulge: the bulging is often more pronounced on one-side of the body.

Affected fish exhibit swimming difficulties, and may tend to float or sink in the water column. Generally, the scales are not raised, and the eyes appear normal. Typically, only a single fish is affected. Radiography will clearly show if the swim bladder chamber is enlarged or displaced.

Treatment: Antibiotics are best for dealing with a suspected bacterial infection of the swim bladder, so consult a vet.

(4) Gut blockage / infection

Blockage of the gut may be due to a gut

infection, undigested food, or a tumour. More rarely, it can arise from swallowing a foreign object, such as a large stone. Large predatory catfishes, such as Phractocephalus (red tailed cat) are known to occasionally swallow objects, including items of decor and pieces of aquarium equipment! The fish may make choking actions in an attempt (sometimes successful) to regurgitate the object. Often with gut problems there are few outward signs of disease. Affected fish tend to stop feeding and may stop passing solid wastes. Buoyancy may be affected in some cases.

Treatment: In the case of large fish (e.g. adult koi or large catfish), a vet may be able to examine the gut using an endoscope. Ingested foreign objects and tumours may show up clearly on X-ray. Ingested objects may need to be removed surgically. Antibiotics are the best treatments for suspected bacterial infections of the gut. With some types of pond fish, such as koi, refrain from feeding them at low water temperatures (for koi: below about 10C; 50F) as their digestive systems function poorly in the cold, risking a gut blockage and possible infection.

(5) Egg-binding

This condition (known technically as "dystocia") can theoretically affect any egg-laying fish, but seems more common in certain species. For example, I often see egg retention in khuli loaches (Pangio spp.), presumably due to the fact that these fish are notoriously difficult to breed in captivity, hence the females are unable to shed their eggs. In pond fish such as koi, egg-binding may follow an unusually cold spring – the low water temperature inhibiting spawning activity and hence the shedding of eggs (warm water conditions are a major spawning trigger in koi).

Treatment: Egg-binding is rarely life-threatening, hence intervention is not usually needed. Generally, the eggs will eventually be reabsorbed – a process that can take many months. Forcing the eggs out of an egg-bound fish can do far more harm than good, even when performed on large species such as koi. In any case, never practice this technique without proper training.

(6) Obesity

We sometimes see obese ornamental fish, and indeed they occasionally turn up on the show bench! Perhaps more familiar to us are images of obese "wild" carp on the front of angling magazines, their bloated bellies the result of scoffing large quantities of nutritionally inferior bait foods ("boilies"). Poorly balanced fatty diets may lead to obesity and possibly excess fat deposition in the fish's liver, resulting in overweight, unhealthy fish. With obesity, the abdomen enlarges slowly over months, rather than fairly suddenly as generally occurs with the more common causes (eg bacterial infections) of bloating. There are no accompanying scale or eye problems.

Treatment: The only remedial action is to switch to a quality brand of fish food (and give yourself a ticking off for feeding a poor diet in the first place!). Bear in mind that cheap brands of fish food are not necessarily a good buy, especially if they end up ruining your fish's health.

EXPERTISE IN FISHKEEPING

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