



FEDERATION OF BRITISH AQUATIC SOCIETIES

www.fbas.co.uk

BULLETIN



Yes, it's about fish, honestly!

Tetra food[®]

Advanced nutrition for healthy fish and clear water!



We're at the leading edge of advanced technology fish food and all our research is geared around producing products designed to enhance the health of your fish. Our premium staple fish food **TetraPro** is manufactured by a patented production process, that is unlike any flake foods and provides a core of active ingredient concentrate for optimum health and vitality. There's **TetraPro** with omega 3 fatty acids, to give more energy and better growth.

For brilliant colour try **TetraPro Colour** with high-quality carotenoids. And for extra resistance, use **TetraPro Vegetable** with spirulina algae. With over 50 years of experience and research behind us, we have everything you need to ensure years of worry-free enjoyment. www.tetra.net



The experts at making fishkeeping easy

BULLETIN

June 2008

Contents

Editorial	4
Balinese Diary	5
Dramatic Performers	12
Ask Us	16
Total Domination Campaign	18
Breeding <i>Pseudocrenilabrus nicholsi</i>	19
Star Fisheries – Chinese Quest 2008	23
Nitrogen	26
Dinner is Served	30
Know Your Fish – <i>Jordanella floridae</i>	32
FBAS Going Paperless	34
Bizarre Creatures Discovered off East Coast	36
The Green Corner	37
New Products	38
Show & Events Diary	41

*Opinions expressed in any article remain those of the author
and are not necessarily endorsed by this publication*



www.fbas.co.uk

EDITORIAL

Welcome to the June issue of the new look Bulletin.

You may be hard pushed to see any difference in the actual contents and make-up of the Federation's quarterly magazine (and we've had all the usual 'problems' of finding material for it too!) but it's in the presentation that things have changed.

From June 2008, the Bulletin will be directly accessible on the website - you'll read about the reasons why elsewhere in this issue - and, as you see, we've got our colour back.

Individual subscription to the Bulletin will still be available but from 2009 delivery will be by password-controlled access on the FBAS website, rather than by post. Immediate advantages of this will be faster delivery to overseas subscribers and at a possibly reduced subscription rate.

We appreciate that this decision could inconvenience a very small minority who are not internet-connected but using the "new technology" should be to everyone's advantage in the long run.

With the Internet able to bring you the Bulletin faster, and in better shape, we think it's only fair to ask you a simple favour in return – do your bit in supporting us by sending in all your news, views and photographs and keep the Bulletin alive.

You can send contributions to the Editor at the address below in whatever form is convenient.

Peter Furze, 9 Upton Road, Hounslow, Middlesex TW3 3HP
Tel/Fax: 0208 570 0934 e-mail: peter.furze@btinternet.com

Balinese Diary (not much of a fishy start!)

Mar. 1st-3rd. A trip to Lombok means a good clean up and water change of aquariums and pond. The community aquarium needs a bit of re-planting as the plants are not growing or producing roots. The gravel is once again re-levelled in the cichlid aquarium so “digger” is kept busy while we are away. There appears to be a leak somewhere around the top on one corner so the water level was reduced by an inch and seems to do the trick. Further investigation needed when we get back.

The maid was introduced into the feeding of the aquarium fish as well as the pond fish (a “pinch” was translated into “tablespoon” measures as a bit of a safeguard). The pond filter needs replacement sponges as they have all shrunk and become less efficient (of course no shops carry spares! It will mean searching Bali for some one that stocks similar material that can be used.) Somehow I missed helping with the packing!

Mar. 4th. Started off only an hour or so later than the agreed start time (that's quite usual for all Indonesian time keeping!). Very hot and humid, so the car's air conditioning was working hard. It's only 1 ½ hour drive to the ferry terminal and traffic was fairly light. Amazingly the ferry was only 40 minutes late in departing! It's no P. & O. ferry journey by any means!! Uncomfortable seating and bodies laying around sleeping on the decks. Half way into the journey we saw about 20+ dolphins, the nearest being about 8 metres from the ferry. Quite a sight, jumping and chasing some Tuna. It was very hot with very little air movement: the humidity got higher and higher as time passed. 5 hours later, (soaked in perspiration!) we disembarked and the air conditioning was put to good use!

The sky was looking a bit black in places and someone was getting a good dose of rain. After 2 ¼ hrs. (with fingers crossed) of the 2 ½ hr. journey our luck run out and the rain hit us. Unfortunately it had been monsoon type rain in the adjacent area to Ka's village and the nearby river had quickly flooded and spread to lower lying areas. The road to the village, that was normally like a dried up riverbed, had in many parts now become a river! Progress was 3 kilometres an hour at the best. At one point the road suddenly disappeared from under my front wheels and the car landed on the engine block and sub frame. Luckily some nearby locals helped get the car back on to 4 wheels with much grinding of gears. 10 yards later they were called on again as the road collapsed under the back wheels! To my relief and amazement we actually arrived at Ka's family home before it got dark. Certainly the little Toyota Yaris, with low road clearance, is a really

tough little motor, It certainly takes a bashing every time we take the car there with this trip being by far the worst).

The village itself had had little rain! (the other road to the village had been completely washed out earlier in the monsoon season!)

Mar. 5th. Mid-morning and no water supply! The water pipe that supplied the village had been broken where it crossed the swollen river! There was little stored water so the pond became the source of water for washing up and some of the cooking! Well the fish didn't complain!! That with the fact that the electric supply was off more than it is on made life a little unpleasant! We were OK for electricity as I had previously bought a small petrol/electric generator for the family, but it does get a bit boring for me as no one else in the family speaks any English, and Ka is busy keeping up with the gossip and helping out with the chores.

I had bought a 15 ins. long plastic crocodile which I secretly placed in the pond amongst the plants. When the children saw it they were a bit taken a back but curios and very cautious of it! They soon realised that it was plastic and had a good laugh. My mother-in-law saw it and yelled for hubby!! When he saw it (his vision is not quite 20-20!) he grabbed a broom and energetically tried to knock 7 shades of - - - out of it muttering, roughly translated, "you little beggar you ain't eating my bloody fish!" much to the amusement of us all watching. A slightly embarrassed father-in-law realising his mistake, grinned and made some remarks to me which, perhaps fortunately, Ka said she was not able to translate.

Mar. 6th.- 8th. 3 lazy days in the sun with only 1 shower of rain with nothing to do except watch the fish in the pond and the very noisy frogs. Why is it they make 10 times as much noise at night as they do in the day?

Mar. 9th. Hoping for a bit of a miracle we decided to take a trip to the beach in the afternoon. Hopefully 3 days of virtually no rain the road had dried out. and levelled off quite a bit by some big trucks that use the road. In a few places we had to empty the car of bodies and Ka guided me through some "dodgy" sections but we made it to the main road. A pleasant afternoon in the sun on the beach, laying in the shade of the trees (sorry not coconut trees). A fresh sea breeze made it a perfect setting for a little afternoon siesta.





Off shore the
pearl farms are
well guarded!



Mar. 10th. Back to normality. Preparing for the return journey home to Bali took even longer with all the family giving helpful advice and repacking everything half a dozen times!

Having navigated over the village road without “grounding” once we had a an uneventful pleasant drive to the ferry (well, one stop to check over two motorcyclists that decided to both use the same bit of road at the same time. No broken bones and no apparent blood so I left it to the locals to sort out. Very difficult to check out injuries when you can’t speak the language!!) The ferry was only 30 minutes late on leaving and the sea breeze was quite strong so a pleasant 4 hours on a calm sea.
Home for dinner of a good plate of bangers and chips! Mmm, delicious!

Mar. 11th. Checking out the aquariums it was nice to see no fatalities. “Digger” had excelled himself! How does he do it?



The turtle aquarium was a bit smelly so Ka got stuck in to clean them out. I was surprised to see that the *Cyphotilapia frontosa* (I am still not certain about the name) had grown as big as our "Oscars" in just those few days. As they get bigger what do you think about putting them in the pond??

Mar. 12th.-13th. Lazy days doing nothing much and just enjoying watching fish. The antics of some of the cichlids is always good for a smile! Digger will often chase off any that get to close to his current excavation and will "face off" the bigger *C. frontosa*. They face each other and the "lunge" at each other for 20-30 seconds but never make contact! They take it turns to retreat!



Mar. 14th.-15th. We took the car to the insurance office as I was concerned that some damage had been done when the road collapsed under us. Usually after taking some photos, filling out a report a man from Toyota comes to the office, takes the car for repair after dropping you off home. This time as it had to go up on a ramp for photographs we had to go to the garage. Amazingly there was virtually no damage except for a few scratches, a slight break in the seam of the front bumper area and a suggestion of wheel misalignment. So they will replace the front bumper area, one wheel and some springs on the suspension area! I have to pay about £6 excess !! Insurance for the year is a bit expensive at £360. Well worth it considering the amount of use I have had from it. I won't take my car to Lombok again!

Mar. 16th.-19th. One of Ka's turtles appears to have drowned trapped under the flat stone used to build a dry area. We noticed in the community aquarium that there was only 1 "Panda" Corydoras living. No bodies or parts of bodies to be seen. A bit of a mystery as all the fish seem to get on well together.

Mar. 20^h.-22nd. Nothing happening on the fish front at all, other than the plants shrinking a bit more! Must have a trip round the shops to see if they have got any decent ones).

This week end is a Muslim holiday and some friends were visiting Bali from Java and we met up with them for a day and visited the cultural park here - many displays of traditional Balinese dancing and music etc. Just after leaving we had a tropical downpour! Some roads were under water.



Above: Ka with the traditional dragon.(no! not my mother in law!)
Above, right: 2 of the dancers in their beautiful and colourful dress.
(OK fellas wouldn't you have a smug smile if you were standing where I was?)

Right: One of the huge statues in the park.



Left: This gives you some idea of the size of these things!



Left: The dragon on walkabout.
A bit hot under that lot!

Mar. 23rd. We went searching for pond filter material but could find nothing imilar in texture to the original material. We ended up buying some small sheets of foam as used in making settee seats! Stuck them in the bath filled with water and had them stomped on for a while to get any colorants out of them.

Sat by the pond for an hour or so looking at the amazing difference in the sizes of the fish that were spawned in the pond. They differ by quite a lot and vary somewhere between 3 and 7 inches!

Mar. 24th. Pond cleaning day! The filter was really bunged up! A good clean and replaced 2 of the 3 "layers" with the cushion sponge!! Changed 25% of the pond water.

Mar. 25th. Fish are not daft! Having removed the cat guard I placed the big net in the pond and left it for a few minutes. Then throwing a good handful of food over the top of it I prepared to catch a good net full! Some hope. Normally food starts a feeding frenzy! Not this time! A few brave ones did a quick dart and grab and away! 3 of us spent the next hour or so fishing. Total haul was about 15. Placed in a bucket with an air stone they were covered (with small gap) and a potted plant put on to hold it in place.

Mar. 26th. That bloody cat had been at it again! It had knocked the plant pot off and the cover and eaten 8 or 9 fish!! Remaining fish removed to the enclosed back garden where they should be safe. (?)

Mar. 27th. Ka took charge of cleaning /water change in the cichlid aquarium. Digger's huge piles of excavated gravel was levelled off and there, well deeply buried, was 1 very dead "Daktari"! Punishment was delivered by Kartini! She rebuilt all the stonework in such a fashion that Digger had little to work on! After a circling his "territory" all evening he gave up for the day and surveyed the rest of the aquarium for a suitable future excavation site.

Mar. 28th So busy sorting out some work to be done on waterproofing the outside of the house we forgot to “do” the community aquarium.

Mar. 29th Digger has got his own back on Kartini! Somehow he has managed to move 3 plastic plants by exposing the block “roots”. Somehow, don’t ask me how, they have been repositioned by 2 or 3 inches! He has also found an area behind the stone work where he is now busy redesigning!

Mar.30th. The pond filter is not as good as with the old filter material so further searches of Bali will be undertaken in due course. Kartini and the maid spent some time fishing and managed to catch zero local fish!! They all disappeared into the caves and refused to be caught! When they are caught they are kept un-fed for a couple of days with daily water changes. Then they will be prepared and frozen ready for a nice fish dinner.

Mar.31st. Thoughts are now on how best to move the aquariums so the walls can be worked on. Not a job I really want to undertake! The builder thought it would not be a problem as they could just pick them up and move them! He soon changed his mind when I told him how much the 1.2 meter aquarium weighed!

Not a bad month as far as fish deaths are concerned. Strange about the Panda C’s though. Must spend more time with the fish and trying to improve plant growth and the environment to induce some spawning type conditions.

I WOULD LOVE TO HEAR FROM YOU WITH YOUR HELPFUL HINTS,
SUGGESTIONS OR COMMENTS PLEASE ON ANYTHING
FROM ALL OF THE ARTICLES.

Clive Walford

Email: clive_walford@yahoo.co.uk

DRAMATIC PERFORMERS

by Les Holliday

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 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.

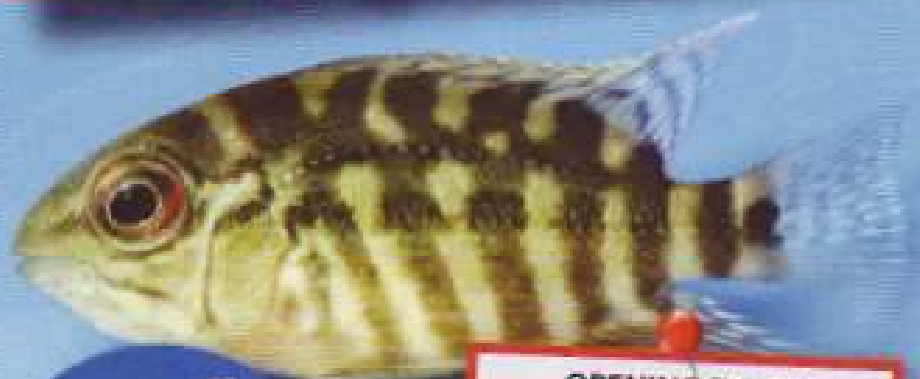
Opti-Carb can also be used as a spot treatment to remove specific toxic metals and compounds without affecting pH, KH or General Hardness. Formulated for reef aquariums and excellent for use in fresh or saltwater aquariums.



Visit www.hagen.com

Wholesale Tropicals

RETAIL SHOPPERS ONLY



You will
be amazed
by our rare
and unusual
fish!

OPENING TIMES

- MON, TUES, WED, FRI 10.30am-6pm
- THURS 10.30am-2pm
- SAT 9.30am-6pm
- SUN 9.30am-1.30pm

On the B 206 route - opposite main Post Office

- OPEN ALL BANK HOLIDAYS 10.30am-2.30pm

NO MAIL ORDER ON DRY GOODS.

FISH DELIVERIES AVAILABLE AT OUR ONLINE
TROPICAL FISH SHOP

www.tropicalfishfinder/wholesale/tropicals.asp
or VIEW OUR ENTIRE TROPICAL FISH STOCK AT
www.tropicalfishfinder.co.uk



Visit for the family
service - and ask for
Terry - you may even get
a cup of tea!

We have been in the Top
shops for the last 4 years
- come and see what all
the fuss is about!

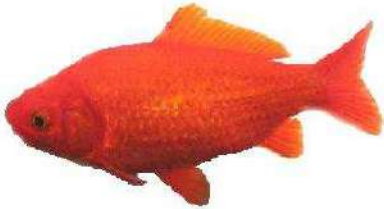
We pride ourselves on our competitive
prices and huge range of livestock.
From Turtles to Discus - from Critters
to Chichlids - whatever you are
looking for we can help.

220 Bethnal Green Road, London, E2
Tel: 020 77395356 Fax: 020 77292444

ASK US

Let's face it, experienced fishkeepers think they know it all so why not put us to the test? If you have a fishkeeping query, we have a large number of experts waiting to deal with your problems – all you have to do is 'Ask Us!'

FBAS Chairman Les Pearce answers this one.



Q: I bought three small goldfish two years ago and placed them in my small garden pond which has a continual pump going and thought they had not survived the last harsh winter. I stopped feeding.

With great surprise I was happy to see them swimming around again a couple of months ago. I feed them flaked food every day and am amazed to see seven little black fish swimming around with them now. They vary in size and are not tadpoles! I don't know enough about fish to know what to do next. In the last fifteen years and out of several batches of fish none have had babies - and I thought goldfish offspring would be gold!

I have read that the adults might eat the young? Should I take them out? Have you any advice/ideas you could give me? Gill

A: Firstly, it is quite normal for goldfish to 'disappear' in the winter, especially if it gets really cold. They tend to find the deepest part of the pond and, although they do not actually hibernate, their metabolism slows right down so they do not require food.

There are those who claim that a 'proper wintering' such as your fish have experienced is the best way to get them to breed in the spring. This may be true but, in my experience, goldfish that are properly looked after will spawn anyway. For future reference, it is probably best to feed them a wheat-germ based food in the late autumn, just before they stop feeding and, again, for the first week or two in the spring.

The small black fish you have discovered in your pond are almost certainly baby goldfish. They are usually black when they are small, their colour will develop later. You will probably find a mixture of reds, golds, whites and, possibly, yellows when they eventually 'colour up'.

When your fish spawned, they will have laid literally thousands of eggs. Some will have been infertile, some will have been eaten by the parents before they even hatched, some will have been eaten in the fry stage and some will have fallen foul of your pond filtration system.

A newly hatched goldfish is only a few millimetres long and no thicker than a thread of cotton. The young fish you now see in your pond are the survivors. Please do not be upset by this, it is perfectly normal and is what would happen in nature; it is the reason fish such as the Goldfish lay so many eggs in the first place. If they were all to survive, the world would be overrun by Goldfish!

The question of whether your remaining youngsters will survive depends on many factors: their current size and the size of the parents, how large your pond is, how many hiding places for the youngsters there are (plants, rockwork, etc), to name a few.

But, from the sound of things generally, I would imagine that most of those you can now see will survive. If you are in any doubt or even if you want to just for interest sake, it would not hurt to net a few of the youngsters out and grow them on in a separate smaller pond or a filtered vat or tank. You can always return them to your main pond when they have grown to a point where you are confident they will not be eaten. Most fish, including Goldfish, will only eat other fish that can comfortably fit in their mouths. There are some exceptions that will bite chunks out of larger prey, the Piranha is probably the best known of these, but Goldfish certainly will not do this.

If you decide to remove some of the youngsters, you can obviously control their diet better but always remember, more fish die of polluted water caused by over-feeding than ever they do of under-feeding. If you want to feed them heavily to promote their growth, good biological filtration and regular water changes with mature water are essential, especially in the smaller, less natural environment of a tank or vat.

Incidentally, the large (one metre or so long) water header tanks make excellent vats for growing baby fish on - with good filtration added of course.

The **T**otal **D**omination **C**ampaign

Can anyone stop it?

Take a look at last year's Open Show statistics and you will be unable to reach any other conclusion than that the TDC showing team were a force to be reckoned with. A casual totting up of victories found that there were no less than 8 Championship Class Trophies and 9 Best in Shows to their credit.

However, this emergence of a new showing force produced a remarkable effect on other exhibitors. Connoisseurs of the Show scene in past years will remember how deterring was the presence of certain individual exhibitors upon Show entries. It seemed that the received wisdom was that "If he's showing then it will be a waste of time me turning up" with the results that Shows suffered.

The 2007 Show scene changed all that. Rather than not compete, exhibitors seemed to revel in the challenge of putting these new upstarts in their place; battle lines were drawn with excellent good humour and even the losers were gracious in admitting they had been beaten by better fish.

The FBAS website likes to think it played its part in fostering this healthy competition by publishing the results as they came in, enabling everyone to see the state of play. Also, the publishing of photos of the winning species, allows others to see what a diverse array of fish are to be seen on the Showbenches these days – we have deliberately not shown photos of hard-worked Judges trying to identify some of the more obscure species!

At the beginning of 2008, it looked as though 'They' were at it again but, encouragingly, a quiet 'resistance group' of exhibitors has been fighting back.

Following a TDC clean sweep at Portsmouth, things have evened out more with, at best, only 50/50 honours being shared. Two Shows stand out: heavily-supported Corby returned 'nul points' as did STAMPS - but then they can't be at every Show can they?

Keep up with the scores (now including Best Pairs and Best Breeders results) at www.fbas.co.uk/Champ Tables.html - and keep those results and photos coming in!

Breeding *Pseudocrenilabrus nicholsi*

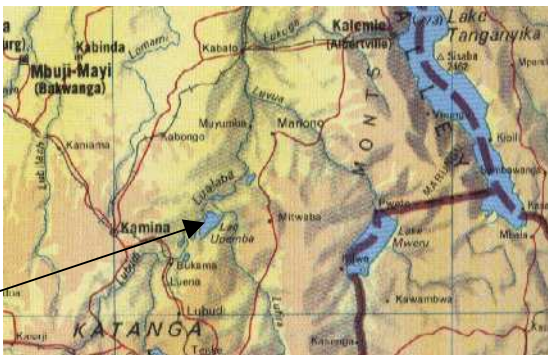
Known synonyms: *Paratilapia nicholsi*, *Haplochromis nicholsi*,
Paratilapia ventralis.

One of a small group of fish that are collectively known, in the trade as Egyptian mouthbrooders. Currently there are three species plus three subspecies. Distributed over part of Northeastern and Southern Africa.



Typical cichlid build with strikingly large head.
Dorsal fin has 13 to 15 spines and 8 to 11 soft rays.
Growing to approximately 100mm (4 inches).

Although they are usually called Dwarf mouthbrooding cichlids, for show purposes they should be shown in Class 'D' (A.O.V. Cichlids) **not** class 'Db' (Dwarf Cichlids).



Natural habitats being rivers and lakes, particularly where there is little water flow and marshy areas, where there is fairly dense plant growth.

Originating from the Zaire basin in the Lake Upembo area

Aquarium requirements; The substrate should consist of fine-grained gravel (about 2/2.5mm) and fairly heavily planted in several places, not overall, the male will need swimming space when displaying to the females. No special requirements or demands with respect to water and its hardness.

Temperature: between 23°C and 28°C.

My water parameters being Nitrate about 50ppm, Nitrite 0, GH about 21°, Calorific Hardness 10 d, and pH 7.3. – in other words virtually straight out of the tap!

Feeding: they will eventually take flake etc., but prefer all kinds of live food, insect larvae, worms and crustaceans and frozen foods.

Spawning/breeding: The males become very vigorous during their display taking on their most intense colours. It is safe in fact probably advisable to have more than one female present in the tank; it takes some of the pressure off of the others. The males appear very aggressive but don't really do any damage.



This adult *P. nicholsi* male is seen displaying his long ventral fins quite clearly in this photograph and would presumably explain an earlier name *Paratilapia ventralis*.



Very clear sexual dichromatism occurs, the male showing even more intense coloration than this photograph shows when sexually active, the female by comparison is a rather drab yellowish grey, with black bars and blotches (see left).

This female has a mouth full of youngsters, note the extended buccal pouch under her chin. The pink specks are *Daphnia*.

To the right is a rather poor photograph showing the youngsters going back into the females mouth. She wasn't very co-operative this was the best I got.

They dig a small spawning pit initially, in which the eggs are laid and fertilised. The female then picks them up and carries them for about two weeks the buccal pouch getting progressively larger.

Until the youngsters are released, at any sign of danger they return to the females mouth again for another couple of weeks before they become too large.



Purely maternal family care with no participation by the male. He goes off in search of another partner, best to remove the brood-carrying female to another tank.

David A. Page, June 2008

ALL YOUR SHOW SUPPORT ON THE WEB

SHOW DATES & POSTCODED VENUES



CHAMPIONSHIP TROPHY CLASSES



SHOW SCHEDULES & ENTRY FORMS



**SHOW WINNERS – TROPHY CLASSES
& BEST IN SHOWS**



**JUST GO TO
www.fbas.co.uk**

SPECIALISING IN FANCY GOLDFISH FOR OVER 25 YEARS Star Fisheries

We are pleased to announce
that this year we will be part of the

Festival of Fishkeeping in Hayling Island

You can expect to see an amazing selection of
Fancy Goldfish which have all been personally
selected by us. In addition, we will have on offer
some of the rarest Fancy Goldfish in the World.

See them at what can only be described as
“The Fishkeeping Event of the Year”

All enquiries to: andy.green@starfisheries.co.uk

Telephone number: 020 8643 8162

Fax number: 020 8643 8166

We look forward to seeing you there!



SPONSORS TO THE GOLDFISH SOCIETY OF GREAT BRITAIN
Star Fisheries, 94a Benhill Road, Sutton, Surrey SM1 3RX

STAR FISHERIES

FANCY GOLDFISH TRIP TO CHINA 2008

Our First showing at the Festival of Fishkeeping.

I am very proud to have been asked to join the very prestigious Festival Of Fishkeeping this year. It is my intention to be able to offer at this Show one of the biggest selections of Fancy Goldfish ever seen in this Country.

These are very bold words indeed which is why I am currently planning the most extensive trip to China we have ever undertaken.

Quality Fancy Goldfish have become more and more difficult to find.

Due to the new regulations in recent years imposed by DEFRA, many of our old and trusted farmers we bought fish from just cannot meet the new criteria for exporting fish to the UK.

We now work very closely with a select few breeders in China who have managed to change things enabling them to export fish to this country.

I consider these people to be some of the best Fancy Goldfish breeders in the world.

For us, the quality of the fish we select has to be the very best

This means after flying the many thousands of miles we then spend countless hours going through ponds to find the best fish available.

Every year is different and, of course, we are always looking for those "very special" fish that just blow you away. We have a level of anticipation this year unlike any other in recent years. Whether the realities of the trip will pan out like we think of course will only be revealed once we arrive at the fish farms themselves.

The trip is planned for the end of August. This will give us enough time to bring the fish back to our new premises, rest them for a few weeks before they then make the trip to Hayling Island. I hope to give you a further update in the next Bulletin - as they say "Watch this Space".

Finally I would like to thank Joe Nethersell for giving us the opportunity of taking part in this spectacular fishkeeping event.

Andy Green, Star Fisheries

THE ISLAND FISHKEEPERS PRESENT



HELD AGAIN THIS YEAR AT **WHITECLIFF BAY HOLIDAY PARK** BEMBRIDGE, ISLE OF WIGHT

ENJOY A 3 NIGHT SELF CATERING STAY FROM FRIDAY 20 JUNE TO AM
ON MONDAY 23 JUNE INCLUSIVE FROM ONLY £46.67 PER PERSON

CHALET FOR 1 PERSON	£120.00
CHALET FOR 2 PERSONS	£160.00 (£80.00 per person)
CHALET FOR 3 / 4 PERSONS	£210.00 (£52.50 per person)
CHALET FOR 5 / 6 PERSONS	£280.00 (£46.67 per person)

PLEASE NOTE - These prices are per CHALET not per PERSON

PRICE INCLUDES:

- ✓ RETURN CAR FERRY CROSSING FROM PORTSMOUTH TO FISHBOURNE
- ✓ SELF CATERING CHALET FOR THREE NIGHTS
- ✓ ALL HOLIDAY PARK FACILITIES AND ENTERTAINMENT FREE (nominal charge made for snooker, pool, sauna, sunbed)
- ✓ FREE SPECIAL BBQ AND FUN ON SATURDAY AFTERNOON / EVENING INCLUDING SOFT DRINKS, FOOD, SALADS, ETC.
- ✓ BACK BY POPULAR DEMAND - FREE BREAKFAST BBQ ON MONDAY MORNING BEFORE YOU LEAVE

HOLIDAY PARK FACILITIES INCLUDE:

- ✓ HEATED INDOOR FUN POOL
- ✓ HEATED OUTDOOR POOL
- ✓ LEISURE CENTRE
- ✓ CABARET AND ENTERTAINMENT
- ✓ CHILDREN'S CLUB
- ✓ SHOP, RESTAURANT, BARS, TAKE-AWAY AND COFFEE SHOP

ALL IN A BEAUTIFUL COASTLINE POSITION!!!

FOR BOOKING DETAILS PLEASE CONTACT:

PAUL CORBETT

THE ORCHARD, RECTORY LANE, GATCOMBE, ISLE OF WIGHT, PO30 3EF
TELEPHONE 01983 721246 MOBILE 07721 965693

OR

DOWNLOAD A BOOKING FORM FROM www.iowas.co.uk/grocklemania.html



MIDDLESEX OPEN SHOW

Rose Community Centre,

Hawthorn Road,

Brentford,

Middlesex TW8 8NT

SUNDAY 6TH July 2008

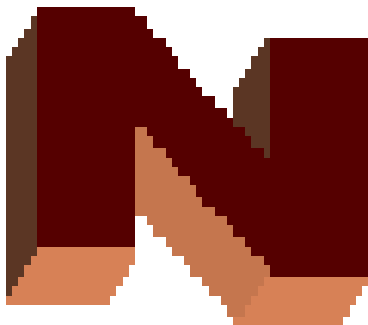
FBAS TROPHY CLASSES "Mc & U"

BEST BREEDER Tetra Trophy

BEST PAIR Tetra Trophy

Details from Dick Mills tel: 01753 645675 email: dickmills@tiscali.co.uk

Rupert Bridges, Tetra, takes a look at Nitrogen



Nitrogen (N) plays an important part in the lives of our fish; as an important component of body proteins, as well as in ammonia, nitrite, and nitrate. Because of this it is useful to have an understanding of how nitrogen moves through the aquarium, starting with the food we feed and ending with its removal through water extraction and plant / algae growth.

Nitrogen in food

Nitrogen is a component of protein, which is one of the most important nutrients for fish. Approximately 16% of the protein is nitrogen, so a typical 45% protein diet will contain about 7.2g per 100g fed. The amount of nitrogen added to the aquarium during feeding will therefore depend on the total quantity of food fed and its protein content.

Protein digestion

During digestion proteins are broken down into their constituent amino acids. This is achieved with the aid of special enzymes called proteases. The amino acids can then be absorbed into the body and used by the fish. However, a percentage of the protein in the diet will not be fully digested and absorbed, and instead will be excreted in the faeces. The amount excreted in this way depends on the digestibility of the protein sources used, so careful ingredient selection and processing is important when manufacturing fish foods. Unless removed, the protein in faeces will be broken down by micro-organisms, resulting in ammonia production.

Amino acid metabolism

Once absorbed into the body, dietary amino acids are then available for building new proteins (protein synthesis) or for energy production. Added to this are significant quantities of amino acids liberated from body proteins, via protein degradation. In fact, there is an on-going process of protein synthesis and breakdown, as body proteins are turned over and renewed. There is an increase in both oxygen consumption and ammonia production in the hours following a meal. The duration and magnitude of these increases depends on the diet and species - in one experiment involving common carp, ammonia excretion peaked at 450% above normal values around 3hrs after a meal, and oxygen consumption peaked at just under 200% at about 2hrs (Carter *et al*, 2002).

Ammonia production

Amino acids are efficient sources of energy for fish, as the process of forming and excreting the resultant ammonia is relatively easy.

This is unlike mammals, where ammonia has to be converted to urea and then excreted via urine. Fish are therefore adapted for using protein as an energy source. Around 50 – 70% of ammonia production originates from the liver (Smutna *et al*, 2002), as this is a major organ for amino acid metabolism. The production of ammonia from amino acids, through their use as an energy source, is called **transdeamination**.

Ammonia excretion



In most fish, the majority of waste nitrogen is excreted as ammonia, with a smaller amount being lost as urea.

The majority of this ammonia is excreted across the gills, principally through the diffusion of NH_3 from the blood into the water. The excretion of carbon dioxide aids this process by acidifying the water immediately next to the gills. As the pH falls, more ammonia is present as non-toxic NH_4^+ . This means that some of the excreted NH_3 is converted to NH_4^+ , thus maintaining a concentration gradient down which NH_3 can diffuse.

The amount of ammonia excreted depends on total protein intake, the balance of protein to energy in the diet, species, and physiological condition. Nutrient-dense diets (i.e. high protein and energy), such as growth foods, will therefore produce more ammonia per gram.

However, they also deliver better performance, and so ammonia production may be very similar per gram of new fish growth (i.e. the efficiency of protein use may be similar or even better in some cases). Whether a diet is high or low protein, what's important is the quality of the protein source, and how well it is balanced with other dietary energy sources (oil & carbohydrate). This way excess ammonia production can be minimised, and so it is a subject of great interest to food manufacturers.

Nitrification

In a healthy aquarium, most of the ammonia excreted by fish and produced from the breakdown of organic matter will be oxidised by the biological

filter. A variety of nitrifying bacteria cycle nitrogen through a number of forms (including nitrite) to form nitrate (NO_3^-). For every 1g of ammonia-nitrogen ($\text{NH}_4^+\text{-N}$) fed into the biological filter, 4.4g of nitrate-nitrogen ($\text{NO}_3^-\text{-N}$) will be produced.

Nitrification is essential to a healthy aquarium, as both ammonia and nitrite are toxic. For long term health, ammonia should be below 0.02mg/l, and nitrite below 0.3mg/l. Nitrate is far less toxic to the majority of aquarium fish, and is unlikely to cause problems unless in very high concentrations. However, high levels can indicate poor aquarium hygiene, and it is a key algae nutrient. For these reasons, management of nitrate is recommended.

Nitrate



Having been converted into a nitrate ion, nitrogen may then have a variety of fates. A certain amount will be taken up by plants and algae, and converted into new tissue. The extent to which this happens of course depends on the amount of planting, and a well-planted aquarium usually boasts lower nitrate levels.

A small amount of denitrification may also occur in the substrate, and indeed there are some products that actively encourage this process to occur. In the absence of free oxygen, certain bacteria use nitrate as a source of oxygen, thereby converting it into nitrogen gas (N_2). This then diffuses into the atmosphere.

More nitrate will be removed through the removal of water from the aquarium, during routine maintenance. The effectiveness of this depends of course on how much is removed, and any benefits can be cancelled out if replacement water is rich in nitrate. If tap water is especially high in nitrate, it may be worth investigating the use of special nitrate-removing media in the filter, or the use of remineralised RO (reverse osmosis) water.

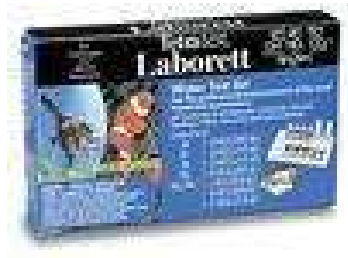
Bear in mind that regular recharging or replacement of nitrate-removing media is usually needed, and that their effectiveness may vary due to factors such as water hardness and pH.

Tips for managing nitrogen

- Stick to recommended stocking levels, as this determines how much food (and therefore protein) has to be added to the pond.
- Use a good quality food to ensure your Koi receive sufficient protein for health and growth, whilst limiting the excretion of nitrogen in faeces and ammonia.



- Remove organic waste from the pond and filter system routinely, to prevent it breaking down and releasing nitrogen into the water as ammonia.
- When stocking a new pond with an immature filter, or following maintenance work on the filter, restrict feeding to once a day to minimise ammonia production. Resume normal feeding once the filter is efficiently removing all ammonia and nitrite.
- Do not feed fish for 1-2 days before major maintenance, transportation, or other stressful events.
- Make sure you have a plan for removing nitrate from the pond - e.g. vegetable filters, water changes, or the use of special media.
- Have an ammonia, nitrite, and nitrate test kit, to enable you to track changes in the most important nitrogen-containing substances.



Visit Tetra at www.tetra-fish.com



DINNER IS SERVED

What started out as a tentative suggestion, the invitation to celebrate the Federation's 70th Anniversary with a Dinner has been taken up very readily by Societies and friends in the aquatic Trade - perhaps we don't all get out as much as we used to?

WHAT, WHERE and WHEN

The Anniversary Dinner will take place at Mill Rythe Holiday Village, Hayling Island on the evening of Saturday 22nd November exclusively in Hudson's Bar with overnight accommodation as an included option if required.

A feature of many of the enquiries already received has been about the Dress Code. Please note that Dinner Jackets/dark Lounge Suits will be required for Gentlemen (as the Ladies have always risen to the relevant occasion suitably attired, perhaps there's no need to be quite so specific in their case!)

HOW MUCH?

There are two options:

1. Dinner only **£30.00 per person**
2. Dinner plus overnight accommodation **£45.00 per person** and Sunday breakfast

HOW TO BOOK?

Please send Grace Nethersell the number of persons attending the Dinner (and requiring overnight accommodation) together with cheque (made payable to 'FBAS') for the appropriate amount to:

FBAS DINNER, 8 Acacia Avenue, Brentford, Middlesex TW8 8NR

NOTE: Reservations are offered on a ' First come, first served basis.'
In order to guarantee your place please make your bookings as soon as possible.

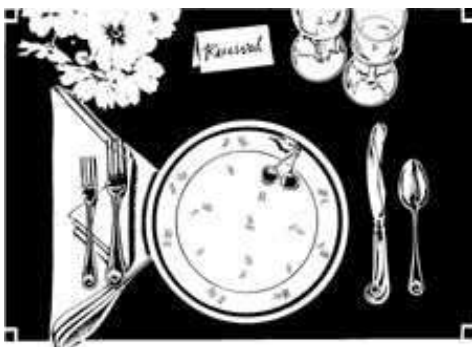
You may also contact Grace directly by telephone on 020 8847 3586 or by email: grace@the-nethersells.fsnet.co.uk

A REMINDER OF WHY WE'RE DOING IT

Since being founded in 1938, the Federation has been serving aquatic Societies throughout the UK on a continually successful basis entirely through the hard work and dedication of aquarists.

From the mid 1950s to the 1980s (regarded by many as being its 'Golden Years') with the development of its publications, Judges and Speakers Lists, audio-visual programmes and weekend Aquatic Shows at London's Vincent Square and Alexandra Palace, through the 90s with displays at the Hampton Court Palace Flower Show to today's dealing in video DVDs, maintaining its own website and annual Festivals of Fishkeeping weekends, the Federation is clearly continuing to keep aquarists happy.

All these achievements are, we feel, well worthy of a celebration, even if many of those that gave of their best in laying the foundations of our success are not around to receive our appreciation.



KNOW YOUR FISH

American Flagfish – *Jordanella floridae* Goode and Bean 1879



Common Name: American Flagfish

Scientific Name: *Jordanella floridae*

Family: Cyprinodontidae

Where found: Florida

Here's a fish which often features in Quiz, as its Show Class can mislead people. As its Family name infers it is related to the killifishes which, as we all know, are benched in Class F.

Its body shape is less cylindrical to the usual slim Killifishes although some similarity can be seen when compared to *Cynolebias*.

The Common name refers to the stripes on the side of the body being likened to the stripes in the American Flag.

Both sexes have a dark blotch on the flanks but the female also features a similar marking on the rear of the dorsal fin.

As is the majority of fishes, the male gets to be the more colourful and the red stripes on the flanks are echoed in the dorsal, pelvic and anal fins. Of course, this colouration is much intensified at breeding time with the male becoming suffused with blue.

Some aquatic literature mention the fish's liking for algae and soft-green vegetation but this is not a fish that will strip your tank of its plants.

Whilst an inhabitant of Florida, the Flagfish does not need summer-high temperatures and can be equally happy at around the 20°C mark, although an increase to the more normal 'tropical' range of 24°C will prove better for breeding purposes.

Taking into consideration the foregoing, the Flagfish will be happy in a modestly-sized aquarium that is well-planted and receives some direct sunlight. It has been credited with a somewhat pugnacious attitude to other tankmates but, as is usual in the aquatic scene, this may only be brought about by the breeding urge in a confined space – a common situation for most fishes kept in captivity.

Despite its 'pedigree,' fishkeepers may be surprised to learn that this fish has an often mixed approach to its breeding method.

Referring to the literature, one may find that it digs shallow pits in the substrate in which to deposit and subsequently care for its eggs. All too often, the alternative happens and spawning takes place in amongst fine-leaved plants! Spawning mops may be used also and perhaps, to hedge your bets, these could be placed on the substrate rather than simply hung in mid-water.

As if to give a further impression that it would rather be considered a Cichlid than a Killifish, some parental care ensues after the eggs hatch (5-10 days depending on temperature). The male takes on this responsibility (it's best to remove the female after spawning) but it may be prudent to remove him after a couple of weeks or so, as the fry develop into temptingly tasty-looking morsels!

Raising the young flows normal feeding practice – newly-hatched Brine Shrimp, finely-crushed flake food and so forth.

FBAS GOING PAPERLESS

Whilst members of FBAS-Affiliated Societies have been able to gather news relating to Federation matters directly via the Federation's website for some time, as from June 2008 direct mail-outs to Societies will be curtailed.

This move has been adopted in the interests of cutting costs, primarily those related to printing and postage.

To begin, the quarterly Bulletin (regrettably produced in monochrome for the March 2008 issue) will be directly accessible on the website and, as a consequence, the June issue will regain its colour presentation. Consultations with advertisers have proved positive in this respect.

The remaining issues for 2008 – September and December - will again be accessible from the website for the benefit of existing individual subscribers but, from 2009, a new Clubzone Area will be created exclusively for FBAS Societies to which all 'free to Societies' publications and mail drops (Minutes etc) will be transferred, depending upon ratification at this year's Annual General Meeting in December.

Individual subscription to the Bulletin will still be available but delivery will be by password-controlled access on the FBAS website, rather than by post. Immediate advantages of this will be faster delivery to overseas subscribers and at a possibly reduced subscription rate.

Access to the Clubzone will be password-controlled in order to maintain exclusivity to FBAS-affiliated Societies.

Passwords will only be issued to a Society once the relevant annual Affiliation Fee has been paid.

Passwords to other specific areas in the Clubzone – such as Judges/Speakers, President/Vice-Presidents and Yellow Badge Holders - will also be issued on an annual basis.

We appreciate that this decision could inconvenience a very small minority who are not internet-connected but, in the face of this ever-increasing drain upon the Federation's finances, using the 'new technology' should be to everyone's advantage in the long run.



10th-12th October 2008
Mill Rythe Holiday Village, Hayling Island

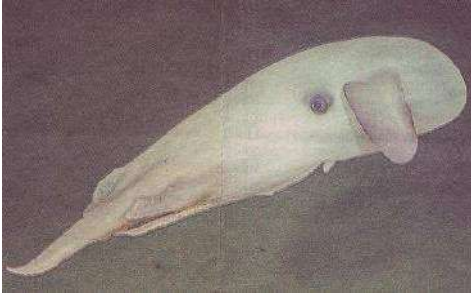
**BOOK NOW TO AVOID DISAPPOINTMENT!!
SPACE IS RUNNING OUT VERY FAST!!**

FOR BOOKING FORM OR MORE DETAILS CONTACT:

Grace Nethersell, 8 Acacia Avenue, Brentford, Middlesex TW8 8NR

020 8847 3586

grace@thenethersells.fsnet.uk



BIZARRE CREATURES DISCOVERED OFF EAST COAST

by Charles Mandel,
CANWEST NEWS SERVICE

DARTMOUTH, N.S. Going where no person has ever gone before, a diving robot has retrieved samples and images of bizarre creatures from deep off the coasts of Nova Scotia and Newfoundland.

Marine scientists in Dartmouth sent the robot into the Sable gully marine protected area and several other regions where it registered photos of an octopus with ears that make it resemble "Dumbo the elephant" and other equally strange animals. "Everything there was new to us," said Ellen Kenchington, a research scientist with the Bedford Institute of Oceanography in Dartmouth, N.S., and chief scientist of the 21-day expedition.

During July, a boatload of marine scientists on the Canadian Coast Guard ship *Hudson* marvelled at the other-worldly animals their diving robot spotted and brought back from the ocean floor 2.5 kilometres beneath them. Much of the research took place in the Sable Gully marine protected area, Atlantic Canada's first MPA set up in 2004 and which is some 200 kilometres off the Nova Scotia coast. The gully is the largest canyon along North America's seaboard. "It's like the Grand Canyon flooded," Kenchington said in a phone interview yesterday.

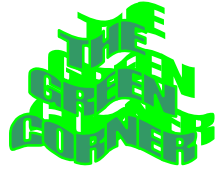
The scientist said the gully is a prime area for study because of its protected status. Numerous marine scientists and oceanographers have converged there and their varied research is coming together to create an in-depth picture of the region's unique ecosystem. Just how unique is it?

Below the water's surface among the exotically-coloured corals, Kenchington believes they may have found a previously unknown starfish species. Elsewhere, they witnessed scallop-like animals with bright orange body cavities hanging suspended from a cliff while they fed.

But the strangest sight may have been the octopuses dubbed "Dumbo." During the submersible robot's second dive, the operator suddenly swerved the camera to follow a one-metre-in-length octopus with large fins attached to its head. Later, the researchers spotted two babies, one in the gully, another off the Newfoundland coast.

submitted from Vancouver by FBAS Vice-President Ken Pye

The area for aquatic plant-lovers



Willow-leaf Hygrophila - *Hygrophila salicifolia*



Hygrophila polysperma and *Nomaphila stricta* were two favourite South-east Asian plant species you could depend on; the former would, with a little encouragement from top pruning, quickly 'bush out' to provide a good thicket of smallish bright green oval leaves whilst the much larger-leaved '*stricta*' would soon tower out of the water and bear purplish flowers if not similarly checked.

The Willow-leaf version has long, narrower leaves which emerge in opposite pairs (rotated at 90° at each emergence) up the woody stem.

Fairly undemanding, a reasonably wide temperature range is tolerated (20°-28°C) and soft to medium hard water poses no problems. Low light levels can cause the spaces between the leaf nodes to widen as the plant becomes 'leggy' seeking the light it prefers.

It goes without saying that the 'prunings' soon provide an excellent supply of new plants if re-rooted in the substrate.



As the author found out, it pays to look beneath the leaves (of any new plant introduction too) as snails, via their unhatched eggs, can easily hijack a ride into your aquarium.

NEW PRODUCTS

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



Ready for summer, an array of **Laguna** waterfalls from **Rolf C. Hagen**.



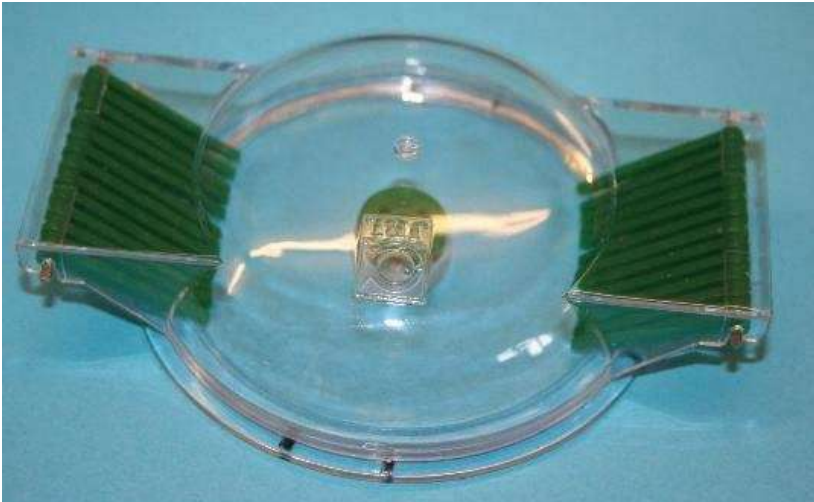
Coming in 'stone-coloured' shades they can be incorporated easily into any design you can imagine, to bring the delights of a water-garden to even the smallest space in the quickest possible time.

Stainless steel is the new copper in this very attractive water feature from **Chenies Aquatics**

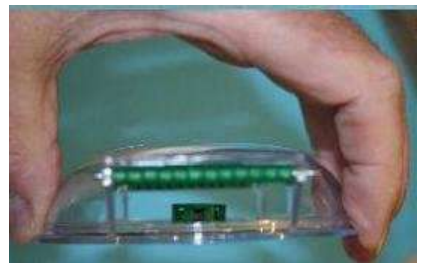


Hands up all those fishkeepers who haven't been plagued by snails at one stage or another. No? Thought not.

Over the years there have been many 'can't fail' ways of getting rid of snails. Favourites include the use of low-voltage batteries and bits of copper wire, the introduction of shell-crunching Loaches, hanging bits of raw meat in the tank overnight (works well with Leeches too in ponds) or dosing the aquarium with proprietary remedies which work in their own mysterious ways – some are reported to dissolve the shells (!) or render the snail's ability to cling on the glass impossible. Now comes what you might call a design from the University of Blooming Obvious – a simple trap.



The dome-shaped device, from **JBL**, might remind youngsters of the Tele-Tubbies' house except that it's clear, not green. Two diametrically-opposite entrances each contain a swinging, non-return mini-portcullis that lets the snails in, but not out.



The method of operation is simplicity itself – bait the trap with some enticing titbit and place in the aquarium overnight. In the morning, remove any trapped snails and repeat the process until you tank has reached the desired snail population.

Many visitors to water garden displays are disappointed that Tropical



Tropical Waterlilies are not easily grown in our variable climate.

However, **Anglo Aquarium** now makes it possible with their **Thermo-Planter**.

The double-walled bucket contains a heater to keep the rhizome warm without the expense of having to heat the whole pond. Simple!



Fed up with floating debris in the pond? A new floating **Pond Skimmer** from **Velda**, could be the answer.



A pump beneath the floating strainer draws surface water down into the removable chamber where the collected debris can periodically emptied.



Aqua One has a range of fun aerators sure to keep any youngster's interest in fishkeeping.



coloured' shades they can be incorporated easily into any design you can imagine.

SHOW & EVENTS DIARY

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

EAST PENNINES SECTION BKKS KOI SHOW	1st May-1st June
FNAS COUNCIL MEETING & AUCTION	1st June
MID-SUSSEX A.S. MAIDENHEAD AQUATICS VISIT	5th June
FBAS GENERAL ASSEMBLY	7th June
WORTHING & DISTRICT KOI SHOW	7/8th June
BJA - MIDLAND CHARITY AUCTION	8th June
BRACKNELL A.S. OPEN SHOW	8th June
CAER URFA A.S. OPEN SHOW and AUCTION	8th June
PLYMOUTH & D.A.S. 60th ANNIVERSARY Meeting	11th June
CASTLEFORD A.S. OPEN SHOW & AUCTION	14th June
CATFISH STUDY GROUP Meeting	15th June
WORKINGTON A.S. OPEN SHOW & AUCTION	15th June
SOUTHEND, LEIGH & D.A.S. AUCTION Start at 8.00pm	17th June
GROCKLEMANIA	20th-22nd June
ISLAND FISHKEEPERS A.S. OPEN SHOW	22nd June
PRESTON & DISTRICT A.S. AUCTION	22nd June
UNION SCOTTISH AQUARISTS OPEN SHOW & AUCTION	22nd June
A.M.G.K OPEN SHOW & AUCTION	28th June
BKKS 2008 NATIONAL SHOW	28-29th June
PLYMOUTH & D.A.S. 60th ANNIVERSARY DINNER	28th June
BASINGSTOKE & D.A.S Open Show	29th June
CLUB 2000 A.S. OPEN SHOW & AUCTION	29th June
FBAS MIDDLESEX OPEN SHOW	6th July
Y.A. A.S. OPEN SHOW & AUCTION	6th July
MERSEYSIDE A.S. OPEN SHOW & AUCTION	13th July
NORTH EAST GOLDFISH SOCIETY OPEN SHOW	13th July
SHEAF VALLEY A.S. AUCTION 8pm	14th July
ESSEX BKKS KOI SHOW	19th-20th July
GOLDFISH SOCIETY G.B. GEN MEETING	19th July
PORT TALBOT A.S. OPEN SHOW	19th July
B.K.A. N/EAST YORKS OPEN SHOW & AUCTION	20th July
CATFISH STUDY GROUP Meeting	20th July
SOLWAY A.S. OPEN SHOW & AUCTION	20th July
SCCRS OPEN SHOW	27th July
GREATER MANCHESTER CICHLID SOC AUCTION	27th July
PERTH A.S. OPEN SHOW & AUCTION	10th August
FRIENDS OF YORKSHIRE OPEN SHOW & AUCTION	10th August
THREE COUNTIES SHOW	10th August
A.S.A.S. MINI CONVENTION OPEN SHOW & AUCTION	17th August
CATFISH STUDY GROUP	17th August

CASTLEFORD A.S. AUCTION 8pm	20th August
BRITISH AQUARIST FESTIVAL (including C of C)	24th August
SE SECTION BKKS KOI SHOW	24-25th August
FBAS GENERAL ASSEMBLY	6th September
BRISTOL A.S. (Goldfish) OPEN SHOW & AUCTION	6th September
KENT/WEST LONDON BKA MEETING and AUCTION	7th September
THE LONDON SHOW	7th September
SCOTTISH AQUARIST FESTIVAL OPEN SHOW	7th September
SELECT A.S. OPEN SHOW & AUCTION	7th September
WASHINGTON A.S.P OPEN SHOW & AUCTION	7th September
BRISTOL TROPICAL FISH CLUB OPEN SHOW	13th September
YORKSHIRE CICHLID GROUP AUCTION	14th September
HOUNSLOW & DAS OPEN SHOW	20th September
N.GOLDFISH & PONDKEEPERS SOC OPEN SHOW	20th September
GRIMSBY & CLEETHORPS A.S. OPEN SHOW & AUCTION	21st Sept
T.T.A.A. OPEN SHOW	21st September
CATFISH OPEN SHOW & AUCTION	21st September
FAIR CITY A.S. OPEN SHOW & AUCTION	27th September
GOLDFISH SOCIETY G.B. OPEN SHOW & AUCTION	27th September
KAAS OPEN SHOW & AUCTION	28th September
BKA CONVENTION	3-5th October
GREATER MANCHESTER CICHLID SOC AUCTION	5th October
SUPREME FESTIVAL OF FISHKEEPING	10th-12th October
PRESTON & DISTRICT A.S. AUCTION	12th October
CATFISH STUDY GROUP	19th October
TONGHAM A.S. OPEN SHOW	19th October
CASTLEFORD A.S. OPEN SHOW & AUCTION	26th October
MERSEYSIDE A.S. AUCTION	26th October
CAER URFA A.S GRAND AUCTION	26th October
BRADFORD A.S. OPEN SHOW & AUCTION	9th November
GOLDFISH SOCIETY G.B. GENERAL MEETING	15th November
CATFISH AUTUMN	16th November
CASTLEFORD A.S. AUCTION 8pm	19th November
FBAS 70th ANNIVERSARY DINNER	22nd November
A of A ANNUAL GENERAL MEETING	23rd November
FBAS GENERAL ASSEMBLY	6th December
CATFISH STUDY GROUP Christmas Meeting	14th December

Filtered for

perfection



RO-MAN

WWW.RO-MAN.COM

TEL :- 01823 698813 FAX 0845 2991606



BIG, POWERFUL, INTELLIGENT.



FLUVAL FX5

Massive capacity and 3 huge media compartments housing multiple media types make this new Fluval one of the biggest filters you're likely to find.

Pumping over 3400 L/H for aquaria up to 1500 L, the integrated motor provides all the raw power you'll ever need.

Intelligent Smart-Pump™ microchip technology ensures optimum flow and energy efficiency whilst also preventing air locks.

FLUVAL FX5

A KILLER NEW FILTER FROM THE WORLD
MARKET LEADER

 HAGEN
www.hagen.com