

# FISH WORLD

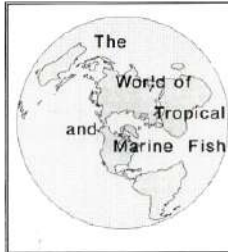


*Magazine*



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F. J. PENFOLD M. V. PENFOLD

# Dear Reader

Welcome to this edition of FISHWORLD MAGAZINE. In this first issue of 1992 you will note that there has been a change of Editor.

On behalf of the Federation I would like to thank Sylvia Brown for her work last year with this Magazine.

Whilst I may be a new face to some of you, most FBAS members will remember me as the short, rotund gentleman who, for some years, was the Publications Officer for the Federation.

My reason for accepting this position as Editor is, I suppose, my constant ambition to promote the hobby of FISHKEEPING, whether it be the "Pot Hunter" who likes to show his fish and win trophies, or the person who untiringly spends hours, and gets great satisfaction trying to protect, by successfully breeding and rearing, a particular species. (If you are one of these dedicated persons, perhaps you would like to write to me, in order to share your results with others.)

Finally, I hope this magazine, through its many varied articles, will encourage those persons who keep the odd aquarium or two, and who consider themselves fishkeeping hobbyists, and yet are among the thousands of unknown fish keepers who do not belong to a club or society. (Why not write for information on your nearest Society.)

I look forward to your support and to receiving your articles for possible inclusion in future issues.

*Peter A Furze*

Peter A Furze, EDITOR

Material for the next issue of this magazine should be in by the 17 of April 1992 and sent to: The Editor, Fishworld Magazine, 9 Upton Road, Hounslow, Middlesex, TW3 3HP  
 Tel or Fax 081 570 0934

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## FROM YOUR CHAIRMAN

WELCOME to this fourth edition of Fishworld Magazine. By the time it reaches you, 1992 will already be two months old. I would, however, still like to wish my Council, the Judges & Standards Committee, and fellow aquarists a happy and successful year of fishkeeping. To our valued friends in the Trade, I would like to re-iterate my grateful thanks as recorded in the December issue of this magazine. It has always been my ambition to bring together the Hobby and the trade. After many years of discussion with the Traders we saw last year an even closer relationship between the two bodies. The trade has also indicated its continuance of working with the Federation in 1992.

It is with great pleasure that I welcome Peter Furze to the post of Editor. Peter, most of you will remember, was a member of the FBAS council for several years as the Publications Officer. He was also organiser on behalf of the Federation for the "Fishworld 88" exhibition at Alexandra Palace in 1988. It therefore seems very appropriate that he should be involved in this "Fishworld" magazine. I am sure you will join with me in wishing him every success.

We have a full year ahead of us with many events where you will find the FBAS and the Traders working side by side. Please see the special article regarding the "Ideal Home Exhibition" and "The Pet Show" where you will find Federation representation. In the June issue we will advise you of further Aquatic events where we will be working with the trade to promote the hobby. Colin Richards has informed me that already he has received requests for booking forms for the 1992 Supreme Weekend of Fishkeeping at Weston-Super-Mare. This already looks like being a sell out very early in the year, so make sure you book your place early.

Finally, I would like to say Thank You for your support and as we go forward together may this really be a successful 1992 for everyone.

JOE NETHERSELL, FBAS Chairman

On the left, Andrew Bartyla MD of Rolf C. Hagen seen receiving the Chairman's Gold Tie Pin Award from Joe Nethersell, Chairman FBAS.

On the right, Joe Nethersell, receiving Man of the Year Award from Andrew Bartyla, MD Rolf C. Hagen



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## INTERPET Water Quality Clinic Hugely Successful

by Tracey Masters, Marketing Manager, Interpet Limited

A "clinic" to demonstrate the ease with which aquarium water can be tested with tablets raised a few eyebrows among Interpet's technical staff when some of the samples indicated that water testing is not always given appropriate attention.

Over 100 people visited Interpet's water quality "clinic" during the recent Supreme Weekend of Fishkeeping, held at Sand Bay, near Weston Super Mare (8-10 November). The clinic formed part of a promotion by Interpet to raise awareness of the company's recently-launched Easy Test Kits.

Around 60 tests were conducted during the two-day event, and the results of some of the samples caused some consternation to Interpet's product development manager Adrian Exell.

"The vast majority of visitors were people who were fairly keen and knowledgeable fishkeepers, but we were surprised to find that only very few of the water samples tested were of acceptable quality," Adrian remarked. He continued, "Happily, few people had nitrite problems, but there were some real horror stories, which highlight the need for constant vigilance in water testing. For example, one fishkeeper had ammonia levels in the aquarium so high that his Goldfish were becoming stressed, leading to dropsy; while another hobbyist apparently had no filtration and his aquarium water was almost pure poison!"

In addition to the practical assistance to fishkeepers during the show, the water quality clinic provided the perfect opportunity to demonstrate the ease with which a wide variety of water conditions can be tested.

"Water testing should be considered an essential part of keeping an aquarium or pond", explained Adrian Exell. "The use of tablets provides a quick and extremely accurate means of ensuring that your water — and thus your fish — remain healthy".

Seven Interpet Easy Test kits are available individually, as well as a complete kit containing five tests and refill packs. The tests check levels of nitrate, nitrite, ammonia, copper and pH, and incorporate tablets to provide a highly accurate, stable and simple means of monitoring water quality.



Richard Barton, product development scientist for Interpet, checks a sample of aquarium water during Interpet's "water clinic" at the Supreme Festival of Fishkeeping.

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## What's the difference?

by C.A.T. (Cyril) Brown  
Riverside A.S. and Judges & Standards Member

FOR this fourth edition of *Fishworld Magazine* I have decided to discuss two members of the Genus *Barbus*, they being among some of the many fishes that have been noted as being similar either in form or colour and are capable of being confused.

The choice of these particular fishes was made because during the 1991 Show

Season one or other have, to put it kindly, misappropriated the other's name and have sometimes had them altered (frequently incorrectly) on the Show Bench. The basic body colour is variable among fishes of these species, therefore it has been thought prudent to ignore colouration and concentrate on body shape and markings. Therefore, on these terms, let us consider the two species.

**BARBUS BARILOIDES**  
(Boulenger) Size 70mm



The body is deeper with a thicker wrist and caudal peduncle, length of head greater and more pointed plus smaller scales on the body than *BARBUS FASCIOLATUS*. All fins are yellow to reddish with the dorsal displaying an indistinct red blotch on or near the anterior margin. Twelve to sixteen bluish black bars are present on the flanks, the second or third usually being the most prominent, the rearmost bar is reduced to a small, more or less, diamond shaped blotch, while the pre penultimate and penultimate bars are carried obliquely at diverse angles (specimens have been noted with these two bars displayed horizontally just within the dorsal and anal contours). Iris of eye red.



**BARBUS FASCIOLATUS**  
(GUNTHER) Size 70mm

The body is less deep and with a slimmer wrist and caudal peduncle, a shorter head and larger scales than *BARBUS BARILOIDES*. Dorsal, caudal, anal and pelvic reddish brown at the base with the remainder of the fin and the pectorals without colour. Approximately twelve bluish black bars are present on the flanks with the second being the most prominent, and the rearmost normally extending the full depth of the caudal peduncle. The above sizes are taken from the current FBAS No. 6 Booklet entitled National Show Fish Sizes and Technical Information. C.A.T. Brown 1992

The above fishes together with others in the series will be featured in a new series of books to be shortly published by the FBAS. These will not only identify fishes and highlight the differences between them, but will also cover Temperature, PH, Ecology, etc., as well as compatibility with other fishes and breeding procedures.



## CLUB NEWS



### Riverside A.S.

THANK YOU FOR YOUR KIND THOUGHTS AND GOOD WISHES

Cyril & Ivy Brown wish to thank all those who wrote to them on the occasion of their Golden Wedding. (Cyril tells me they had so many messages of congratulations that it is really impossible to reply to them all, so please accept this short note as a **THANK YOU** for your kind thoughts).

### Hounslow & District A.S.

To celebrate its 42nd year Hounslow has just published its club History covering a span of 41 years. If you would like to buy a copy the price is £1.50 including post & packing. From The Secretary, Bob Nelhams, 35 Exeforde Avenue, Ashford, Middx. TW15 2EF.

### Merthyr Aquarist's Society

The club would like to thank the Sponsors, the Judges, Society members and the competitors/exhibitors for the support given to their 1991 Open Show. We hope everybody enjoyed their day out. We would also like to take this opportunity to inform exhibitors that our **Open Show for 1992** will be held on **26th of April**.

### Swindon Aquarist Society

Announce the date of their show Sunday 3rd May. (See advert) Refreshments, FBAS Bookstall. There will also be a private stand sale area where the public can hire a table for the day, and sell whatever they like.

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## 2 Aquatically-Accented Events at Earls Court

Despite the onset of the new Open Show season, Londoners will get 2 extra opportunities to examine fishkeeping during the early part of 1992.

Visitors to recent **Ideal Homes Exhibitions** who braved the long queues to visit the show houses, may remember seeing aquariums making increasing appearances as modern decor. This year, with the advent of Earls Court 2, the extra Hall has been given over to leisure

hobbies and within this setting fishkeeping is making an impressive display.

A three-way co-operation between Aquarian (Pedigree Petfoods), Underworld Products (Loughborough) and Kingfisheries Ltd. (Beckenham) will be on view on **Stand 1004** throughout the Show (12 March to 5 April) but, at each weekend during the Show's run, special fish experts will be making guest appearances.

As we go to press, the list looks like this:-

MARCH 14 — 15  
**David Sands**  
renowned Catfish authority and  
Consultant to Aquarian Advisory service

MARCH 21 — 22  
**Dave Keeley**  
Underworld Products, specialist in  
Marine Fishkeeping

MARCH 28  
**Dick Mills**  
prolific aquatic author  
answering queries

MARCH 29  
**Adrian Dempsey**  
General Secretary, FBAS, with advice  
on Aquatic Society activities & locations  
nationwide

APRIL 4 — 5  
**David Ford**  
world-known 'AQUARIAN' authority with advice on Nutrition and Equipment

**Stan Kemp** of Kingfisheries Ltd., will be on hand every day of the Show to answer any questions posed by members of the public attracted by the 5 fully-furnished aquariums on view. The Show will be open from 10am to 8pm each day with Thursdays being 'late-nights' 'til 10pm. So, if you have been avoiding visiting the Ideal Homes Exhibition (to avoid buying furniture, redecorating ideas or for whatever reason in the past), now you've got a really good excuse to suddenly change your mind. Just try to look surprised when your other half discovers there's fish on show!

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## PET SHOW

Earls Court, May 2-4

The **PET SHOW**, postponed from last August's date at Wembley Arena changes venue as well as dates to take over Earls Court in May (Spring Bank Holiday Weekend) and we are pleased to say that fishkeeping will be well represented.

Thanks again to Aquarian (Pedigree Petfoods) the Federation's well stocked **Show Stand** will be putting forward the organised face of the hobby, offering advice on Society locations, probably helping out with practical demonstrations and answering general aquatic enquiries. Also on hand will be the many **Specialist Societies**, who will be explaining the popularity, and the secrets of success, in keeping their own particular favourite aquarium or pond species.

The **Aquarian Advisory Service** will be hosting the display and, of course, there will be plenty of chances to get a 'hand on' experience of all the latest Aquarian equipment and foods and to discuss their merits with the development team, and aquatic problems will be met with understanding and, hopefully expert diagnosis and constructive remedies offered.

It is understood that all major aquatic Traders have been invited to attend, so it looks as if despite the present of other "fur and feathers" forms of life, fish will be able to hold their own without too much trouble. Experienced hobbyists should not think that there will be little of interest to them for, although it is hoped that many new people will take up fishkeeping after their visit to the Show, aquatic manufacturers welcome 'feedback' from their regular users; after all, who better qualified to assist in the development of new products and provide the answers to all those market research questions.

### ★ ★ Editor's Competition ★ ★

What is the President about to say to the Chairman?  
Comments on a Postcard to be with the Editor by 17 April.



Editor's comment:  
*Listen Brother, you may have the chain around your neck, but I wear the Crown!*

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## Catfish Capers

by Ken Rendall

**M**y catfish was beginning to get on my nerves. I began to wonder why I'd bought it in the first place! It seemed a good idea at the time, though for a while I did fancy a proper cat. I just couldn't bear the thought of having to open all those tins of Kit-E-Kat — I've always hated the smell of the stuff. And I could hardly just pop off for the odd week and expect the thing to look after itself, either. So — a catfish I got.

After about 3 months though — I wasn't so sure. I was growing suspicious of the damned thing. He was up to something — I was sure of that — I just didn't know what! It was always when I sat in my favourite chair facing the television. Whether I was actually viewing or more often, reading, it didn't seem to matter. He just made me feel uneasy. Every time I looked round, there he was (Cyril I called him) his penetrating gaze always in the same direction. He appeared to be looking over my shoulder, it haunted me. When I was reading, I became convinced Cyril was reading with me. At other times, watching TV, Cyril was taking it all in too.

Whenever I simply pattered about the room, he would be facing any old way. Still the same expression, mind you, and pretty dopey at that, with his beady, unblinking eyes and his incessant, rhythmic gaping. The really suspicious thing was when I sat in my chair and did absolutely nothing ... I tested it out, many times ... I kept looking round, only to find Cyril absolutely oblivious, clearly not fussy about which way he faced, but just let me pick up a book or switch on the set and there he was — absolutely riveted. I know that dolphins are supposed to have some sort of in-built radar, but now I was beginning to think my simple little catfish was developing sophisticated skills. I'm telling you, it was distinctly unnerving!

I wouldn't have minded if he had been a bit more frisky. I might not even have noticed his strange behaviour then. I began to think a tropical fish, or perhaps even a tankful might have been a better choice. But Cyril was so sluggish. I did suppose, mind you, that my own metabolism might well take a plunge if I were to be suspended in cold water for any length of time, so it occurred to me that I might try to warm up his habitat a little. I resolved not to overdo it, of course, for fear it might be dangerous.



### Central-heating

I got one of those gadgets the tropical enthusiasts use, a sort of combined heating coil and thermostat, and dangling the thing in one corner of his tank, plugged in the power supply and switched on the mains. Cyril didn't budge during all this, for "Panorama" was on-screen at the time. I set the thermostat so it matched the present water temperature, then advanced it by one degree. Nothing extraordinary happened that evening, but I thought him slightly more mobile by the morning. I decided to press ahead.

On a daily basis I persisted, 1° at a time, and did eventually notice more significant changes. His attentiveness when I was reading or viewing was plainly fading, but he began to grow — perceptibly, I swear it and his appetite was much enlarged. Soon he took to cruising upside down, breaking the surface with his mouth open. It was as if he wanted me to feed him, so I got some live minnows and experimentally dropped one in between his jaws. It was just what he wanted ...

... judging by the way he snapped it and gobbled it down, finishing with an audible belch. I didn't know fish could belch, did you?

That was just the start, for over the next few weeks he grew so big I had to get him a new tank and a 1 kilowatt heater with a high temperature thermostat.

### Manners, manners

The minnows, of course, were now a big joke. Or perhaps I should say a little joke, not that Cyril actually laughed when I fed him one, though he did appear to be developing the first signs of a sardonic smile. From then on, it was perch that took his fancy, and his belching grew quite resonant.

Soon, his length having increased to more than a metre, he took to pulling himself up by his pelvic fins, which he would hook over the sides of the tank, in order that he might beg for his dinner. He barked like a seal and clapped his fins together and I had to scale up his rations to young pike. At first, he was slow to take them, but became more eager when I tried lobbing them from half way across the room. He soon learned to catch them in fine style. It was at this stage I began to think things were getting a little out of hand, but it was my experience yesterday morning that really convinced me.

The noise was already impressive when I got downstairs. There he was, up and begging though I could barely see him for the steam. He yelped for his starters, and by the size of him at this stage, I judged I would have to get down to the fish shop for something altogether more substantial than pike. His tail thrashed at the gravel impatiently. The steam puzzled me, though, for I hadn't had the water that hot! When I checked the thermostat, it was way up at the maximum, in panic, I turned it back and that was when Cyril reacted. He surged over to the corner, slapped my wrist with a leathery fin, and knocked me sprawling

with a savage head-butt. As I picked myself up from the floor, I distinctly saw him use his right fin to turn back the knob to fully clockwise.

That was hell let loose ... He kept me running all right. It was as well Sid Russell, the fishmonger, was just around the corner. It was costing me a fortune though, thank goodness for my flexible friend.

### Expensive tastes!

Salmon after salmon I threw the monster's way — for Cyril had turned up his nose at all else — and the living room was like a steam-room. He wouldn't let me anywhere near that thermostat. I wore only my Y fronts, except when I had to rush round to Sid's shop for more salmon, of course. Sid was beginning to look worried that he might run out. I had made no attempt to explain, of course, and I think that worried him even more!

Things did quieten afterwards, fortunately even Cyril's thunderous belches abating and at last, wearily, I got away upstairs to bed. Not that I had a restful night, mind you. As if in a lake of sweat, I sweltered and gyrated away until the first glimmerings of dawn. By then, I could stand no more. Four o'clock in the morning, this was, and I had been abed no more than 3 hours, but I was totally awash, wringing with a fetid dampness. As I fell limp from my bed the reason was immediately clear. My electric blanket was switched on — and in July! How on Earth...? Paranoia roged! Had Cyril learned how to climb a staircase? Was he trying to finish me off? Perhaps my guardianship was a disappointment to him — though I had tried my best, even he should have seen that. Well, I was certainly going to fix him, right there and then, and for good! I seized a long-handled brush from the cupboard on the landing and smashed off his head against the balustrade. I would either beat him senseless with the blunt end, or skewer his entrails with the splintered end. Failing both, I could always plead with him!

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## Catfish Capers



I crept downstairs .....

All was SILENCE .....

Where was he? ..... Was he lying in WAIT?

Opening the door to the living room, little light penetrated the heavy curtains. It was still in deep gloom. Quaking I threw the light-switch to see ... well, to be quite honest to see hardly anything at all! Cyril had SHRUNK!

The room had dried out, and was suddenly cool. Hardest of all to believe, the tank had reverted to its original size. I dropped my weapon in deep shock, and tiptoed forward. The now midged Cyril

gaped, unmoving save for his lower jaw, his eyes empty of recognition. I stared at him for a great long time, until — and I am convinced of this — he gave me a long, slow WINK!

A dream you say? ... No way!

I remain convinced it was a dreadful vision of the future. Cyril had better watch out, though. As soon as I manage to pull myself together, the little blighter is going right down the tube!

(continued)



## Judges Corner

by Peter W. Cottle,  
Chairman, Judges and Standards Committee

The new measuring calipers have now been received and will be distributed as soon as possible. We hope you will find them a useful piece of equipment. Our thanks go to Bob Esson for the design and especially to AQUARIAN for their generous sponsorship which has enabled us to provide all judges with the calipers at no cost.

The 1992 size sheets will be sent out shortly having been revised over the Christmas period. Thanks to Colin Pennell for his detailed revision of Classes B & B+. Judges will notice that some of the old names have now been removed (mainly due to synonyms) so please check up on them.

The Judges and Standards Committee for 1992 will be  
R. D. Esson, C.A.T. Brown,  
K.E. Saxby and J.A. Carney.

Mrs S.M. Brown has agreed to remain our overworked secretary and her address is

45, Airthrie Road,  
Goodmayes, Iford, Essex IG3 9QU.

All correspondence to the J & S Committee, unless otherwise stated, should be sent to Mrs Brown.

The J & S Committee wish you all the best for 1992.

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# PRACTICAL Fishkeeping

MAGAZINE

Fishkeepers who want to get the best from their hobby need **Practical Fishkeeping** magazine, Britain's biggest and brightest aquatic publication. Throughout the year **Practical Fishkeeping** offers readers advice and tips from the experts, booklets and free gifts with selected issues as well as the regular features, practical advice and handy hints and tips on every aspect of fishkeeping.

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## Seasonal Care

by John Byles, BKKS, Northants Section

### Spring early Summer

April, May and even early June make an active time for Koi keepers after the Winter rest. The air temperature gradually rises but we may also be subject to a wide variation of weather with warm sunny days and cold even frosty nights.

As we all know, water takes longer to warm up than air and tends to maintain a more constant temperature than air.

Spring is in my opinion the most hazardous season of the year for our fish. Our Koi's immune system is more or less inoperative at temperatures below 50°F and becomes effective quite slowly as the temperature rises but with the advent of warmer days, many species of bacteria and parasites quickly become active and begin to reproduce rapidly. It is therefore imperative that we pay close attention to cleaning our ponds and you may wish to add proprietary brands of bacteria to your filters, e.g. ABA or Polybac.

Once the temperature stabilizes at around 50°F start to feed a wheatgerm based food, often called 'Staple' food, and when the temperature goes over 60°F then start to feed a higher protein

food. Try to avoid using a lot of tap water to clean or flush your filters particularly during late spring or summer as tap water contains chlorine and that will kill the bacteria specifically cultivated in the filter media to break down fish waste.

Here's a list of things to do in the Spring:-

Clean the pond with a vacuum pump if you don't have bottom drains.

Top up the pond with mains water but use a mist spray to gas off any chlorine.

Test water to monitor ammonia and nitrate levels.

Offer higher protein foods only when the temperature goes over 60°F.

Avoid using old or last year's food. If necessary, treat the pond against bacterial and parasite problems in the late Spring, use treatments with care.

(Our thanks to BKKS, Northampton Section for the use of this article.)



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## 1991 OPEN SHOWS Qualifying for FBAS Brooch Scheme

Aberdare	Exeter	Plymouth
Birtley	Gateshead	Reading
Blyth	Hartlepool	Romford & Becontree
Bournemouth	Hounslow	Salisbury
Bracknell	Isle of Wight	S.E. London
Cannock	Kings Lynn	Sidcup
Cardiff	Llantwit Major	Southend & Leigh
Corby	Malvern	Stockton
Cramlington	Merthyr	Strood
Deal	Mid-Sussex	Thorpe
East Kent A.S.G.	Northampton	Walthamstow
Eastleigh	North Bucks	West Cornwall
East London A.P.A.	Port Talbot	(to be confirmed)

## SPONSORED AWARDS for 1992 Open Shows

In addition to the usual Trophies awarded by the host Societies, we are pleased to announce the following Awards for the coming season.

**Interpet Ltd.** have generously agreed, not only to continue sponsoring the FBAS Championship Class Trophy Awards, but also to present a full range of BEST IN SHOW Trophies during 1992.

**Rolf C. Hagen** will again be sponsoring their popular SHOW PACKS for this year's Shows, and availability and distribution (to any Society) is made through the FBAS. Societies should not apply to Hagen's direct.

Conditions required to obtain these Trophies and/or Show Support Packs are fully laid out in the 1992 FBAS Yearbook. Basically Societies' Draft Show Schedules and Application Forms should be sent to the FBAS Trophy Officer, Alan Handerson (address below) for ratification whereupon he will send the Society a relevant Company advertisement for inclusion in their final Show Schedule. Please allow time for this necessary exchange of paperwork ahead of the printing of your final Schedule. Full information about all award Schemes is also available from Alan, and his address is:

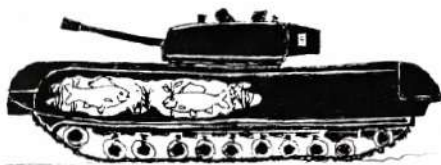
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## 1992 OPEN SHOWS & FESTIVALS

Date 1992	Society	Rules	Date 1992	Society	Rules
01-3	Burley in Wharfedale	FNAS	07-6	Stockton A.S.	FBAS
08-3	Birtley A.S.	FBAS		Llantwit Major A.S.	FBAS
15-3	Greenock	FBAS	13-6	SPAS	GSGB
28/29-3	Y.A.A.S. (YAF)	FESTIVAL	14-6	North Bucks A.S.	FBAS
12/3-5/4	Ideal Home	EXHIBITION		Skemsdale A.S.	FNAS
04-4	Hounslow A.S.	Spring Dance	20-6	Isle of Wight A.S.	FNAS
05-4	Exeter	FBAS	21-6	St. Helens	FNAS
	Hallon A.S.	FNAS		Hartlepool & Dist.A.S.	FBAS
	Aberdeen	FSAS	??-6	Romford & Becontree	FBAS
	Kirkcaldy A.S.	USA	05-7	S.E. London	FBAS
	Bishop Auckland	FBAS	01/2-7	Blyth A.S.	FBAS
19-4	Malvern A.S.	FBAS		Hampton Court	EXHIBITION
26-4	East Kent A.S.	FBAS	11-7	Port Talbot A.S.	FBAS
	Merthyr A.S.	FBAS	19-7	Reading A.S.	FBAS
			22/23-8	F.S.A.S. (SAF)	Festival
02-5	Southend & Leigh	FBAS		Darlington A.S.	FBAS
03-5	Kings Lynn A.S.	FBAS		Walthamstow A.S.	FBAS
	CAST 88	FNAS	12-9	Hounslow A.S.	FBAS
	Swindon A.S.	FBAS	13-9	Salisbury	FBAS
	West Tallaght	IFAS	11-7	Port Talbot A.S.	FBAS
10-5	Aberdare A.S.	FBAS	20-9	Northampton A.S.	FBAS
17-5	Corby A.S.	FBAS	28-9	East London P & A.S.	FBAS
	Gateshead A.S.	FBAS		Bristol Tropical	FBAS
24-5	Brindlington	YAAS	27-9	Mid-Sussex A.S.	FBAS
27-5	Airport Aquaria HDAS	Barb-B-Q	03-10	Plymouth	FBAS
31-5	Stockton A.S.	FBAS	03-10	Goldfish Society	GSGB
5/7-6	Sandown Park	A of A	18-10	West Cornwall	FBAS
07-6	Cannock A.S.	FBAS	25-10	Fair City A.S.	USA
07-6	Deal	FBAS	31/10-1/11	B&F Manchester	FNAS
			6/8-11	Weston Weekend	FBAS

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# Let there be Ostariophysans

by Bill Rundle  
of Plymouth & District Aquarists' & Pondkeepers' Society

**S**OON after I started keeping fish I wondered about the seemingly endless diversity of form and colour of the various species, and asked myself the question, why should this be? Why also the myriad rainbow assortment of tropical species, in contrast to the more sombre hued, less numerous species from the temperate regions?

It seems now that the answers to these questions are probably tied up with geological alterations that have occurred over the ages of our planet Earth and indeed are still happening.

The paucity of specimens in the temperate zones of the Earth in relation to those of the tropics is almost certainly due to the ice ages more than a million years ago, when the fauna retreated or succumbed before the advancing polar ice mass in the Pleistocene Era.

In Western Europe we are left with just about 60 species of fish and those have possibly all derived since the ice age. (Roberts 1972).

Compare this with the two greatest tropical fish bearing rivers; the Congo in Africa, that is the home of some 560 species, while in South America the Amazon had 1300 species recorded in 1967. By 1978 this figure had grown to about 2500 species for the whole of S. America. These in 60 families most found in the Amazon basin. (Bohkei Weitzman & Menzies 1978).

The largest percentage of these species (85% from the Amazon and 54% from the Congo) belong to the Order Ostariophysii. The fishes of this order are characterised by having the first few bones of the vertebrae connected to the swim bladder and the hearing system, this is known as Weber's ossicles. This apparatus enables the fish to sense movements in its

vicinity and is an early warning system.

The fish in this Order include the Barbs, Catfish and Characins that we keep in our aquarium, a large number of these are among the most strikingly marked or most brightly coloured of all freshwater fish.

In 1880 an ichthyologist Albert Günther, noted that the Characins were found only in Africa and S. America and nowhere else in the world. (There are 200 species of characin in Africa, and about 1100 species in S. America) and he saw that the catfishes and cichlids were greatly evolved on these two continents. He also saw that there was a greater similarity between the fishes of Africa and S. America than existed between the fish fauna of S. America and N. America. He believed that at a much earlier time the two continents were much closer together.

Plant collectors also draw similar comparisons and at the turn of the century proposed the theory that the continents were at one time joined together in one great land mass, Gondwanaland.

As my interest in Characins grew, at the same time as geologists and other learned bodies developed the theory of plate tectonics, the moving of the earth's land masses, and I saw that America had split away from the African continent with the gap between the two, the Atlantic, still slowly widening. If this did happen it would be logical for one to assume that S. America would have the same animal and plant life as is found on the African continent .... But would one?

In 1831 Charles Darwin on his trip around the world visited the Galapagos Islands, and realised that living things on this earth are in an on-going process of change according to their environment. He saw that animal life on the islands

differed not only from their counterparts on the mainland but also varied from island to island. They had adapted to the peculiar conditions that prevailed on the individual volcanic islands.

More recently about 1970 the Rift Valley Cichlids put in an appearance, taking the aquatic hobby by storm. At the same time we were treated in the aquatic journals with a lot of information not only about the fish but also about their habitat. This was interesting. The continent of Africa tearing apart up through the Rift Valley and the Red Sea. An area of volcanic activity and land upheaval, with the Great Lakes altering with the changing land mass. The fishes adapting and readapting as the water areas become isolated or reunited with each other, all on a relatively short time scale in terms of our planet Earth. Here we have a sort of mini evolution period almost while we watch.

Perhaps the greatest of all fish collectors, Eigenmann from 1906, influenced by other scientists of the period, took up the idea of a continental split, and stated that further diversification of the freshwater fishes of the S. American continent, must have come about because the Amazon basin was submerged creating two separate land masses in the S. American continent. This separation theory was proposed by Van Inhering in 1900 and provided Eigenmann with a reasonable explanation for there being not only a link between Africa and S. American fauna, but also three separate ichthyofaunas in the American continents.

He saw that the S. American fish were separate and different to those in N. America, and that those of the central American region are a mixture between the two.

Eigenmann then separates the S.

#### References:

Reberth, T.R.  
Novasok M.J. & Marshall L.G.  
Weitzma S.H. & Weitzmar M.

#### Recommended reading:

Michael Goulding

Ecology of Fishes in the Amazon & Congo basins.  
Early biogeographic history of ostariophysan fishes.  
Biogeography and Evolutionary diversification in neotropical freshwater fishes.

Amazon - The Flooded Forest.

American fish into three major recent fish faunas. The Brazilian, The Andean and The Patagonian.

The Patagonian group he describes as rather poor, consisting of a few derivation of characoids and northern catfishes, with another group very close to the Osmeroids of New Zealand and Australia, and also a few saltwater fish.

The Brazilian group of fish, (the largest in the world) only evolved after the continent lifted from the sea as the Andean Mountain range built up, creating the vast water world of the Amazon basin.

Eigenmann proposed that the Andean group of fish are derived from fish originally from the Amazon area, even though the mountains appeared first. He suggests that they entered the Pacific side of S. America via a Northerly route and down through Colombia. Possibly also they crossed further to the south before the Ances reached their present height.

In later years eminent ichthyologists Regan and Gosline generally agreed, with this explanation of the distribution of the African and S. American fishes.

Although it is generally agreed that these events occurred in past ages there is little or no fossil evidence to prove how our first characins actually evolved. We just know that they did.

As the Amazon basin formed, it suited not only the forebears of our fish, but early plant and animal life as well. They all radiated and diversified into the most wonderful collection of species that exist anywhere on this world.

Let us hope that with enlightenment, reason will prevail, that we might preserve this precious heritage.

I would like to thank Dr. Dave Price and Stan McMahon for their very much appreciated help.

# THE WATER OF LIFE

PART I of a Series

by Adrian Exell, BSc.(Hons)

**T**HE average length of time that fish keepers stay in the hobby is two to three years. Every newspaper classified ads column seems to have a steady stream of complete aquariums for sale. In every street behind garage doors and in attics, empty fish tanks gather dust.

Now every fish keeping enthusiast knows the fascination of keeping and studying the large number of fish that are available. The appreciation by visitors of an attractively set up aquarium in the lounge is universal. So what makes people give up?

Most people think keeping an aquarium or pond is simply a matter of throwing a few fish in some water and watching the fabulous results develop before their eyes. In reality, there is a bit more to it than that. As they soon find out! Research into why people give up fish keeping suggests the major reason is that their prized and expensive fish seem to have a remarkably fragile hold on life. The once enthused new hobbyist gets fed up with replacing fish from a combination of feelings of guilt and failure as well as for financial considerations. The would-be fish keeper becomes tired of explaining about the "big ocean in the sky where George the Guppy now swims" to their distraught children. So, why do fish that have so successfully lived on this planet in their billions for millennia longer than us curl up their fins with hardly any encouragement? What are we doing wrong?

**The answer . . . . . my friend lies in the water!**

Fish, like us, need a healthy environment to live in. Place a human being in a slum environment and stress,

disease and death are the likely outcomes. The fish in our aquariums and ponds is our fishes' environment and we need to understand how to keep it healthy for our fishes' sake. They will then stop keeling over every five minutes and will instead show off all the glories of their full colour and the fascination of their natural behaviour.

It is essential have some understanding of the water environment in your aquarium if you are to keep it healthy. I am not suggesting everyone needs a degree in water chemistry to keep fish. For from it, it is just important to understand a few key features about water.

#### What is water?

Everyone knows what water looks, tastes and feels like and that it is essential for any life to exist. Most would even know that its chemical formula is H<sub>2</sub>O. Water is in fact a miraculous element with a number of unique properties. The most important property in the context of this article is its remarkable ability to dissolve things it comes into contact with, and incorporate them into its own structure.

#### Water is not the same everywhere

Clear sea and fresh water look the same, but drink them and you will soon tell the difference! This is the most obvious example, but even fresh water is not the same everywhere. A peek into someone's kettle will reveal either a clean element or one coated with a white, chalky substance, depending on the local water type. This difference is caused by water hardness.

#### Why does water differ?

As we said earlier, water readily dissolves most things it comes into contact with.

Water from different places varies because when it falls as rain, it comes into contact with different gases in the atmosphere and eventually different vegetation, soil and rocks. It dissolves some of these substances which become part of the water and shape its characteristics. So, we now know, water can vary a lot from place to place, and more importantly, that we cannot tell different water apart visually. However, the use of a few simple test kits can reveal the features of a water sample, allowing us to tell them apart as easily as we recognise features on a face.

#### What, then, are the features of our water supply that we should be interested in?

The important features are the amount and type of minerals and salts dissolved in the water and the pH (acidity or alkalinity). In a future article we will be looking at things that are added to the water in the aquarium environment itself.

#### Why are these features important?

What has this got to do with fish keeping? Fishes' life sustaining body processes are fundamentally influenced by the features

pH	Aquatic environment	pH and hardness ranges of some common fish
6.0	Blackwater Amazon tributary	<b>Acidophiles pH 6-7.5</b> total hardness up to 50mg/litre CaCO <sub>3</sub>
6.3	Malayan river	Argo fish ( <i>Pterophyllum scalare</i> ) Clown loach ( <i>Betta macracantha</i> ) Discus ( <i>Symphyodon discus</i> ) Harlequin ( <i>Rasbora heteromorpha</i> ) Killifishes ( <i>Aphyoseiion &amp; Epilabe</i> ) Neon tetra ( <i>Parachanna inezii</i> ) Ram ( <i>Apistogramma ramirezi</i> ) Red piranha ( <i>Serrasalmo nattereri</i> )
7.0	Lake Chad (middle)	<b>Medium range pH 7.5-8</b> total hardness 150-300mg/litre CaCO <sub>3</sub>
7.4	Mexican river	Black Molly ( <i>Poecilia hybrid</i> ) Common carp and koi ( <i>Cyprinus carpio</i> ) Goldfish ( <i>Carassius auratus</i> ) Guppy ( <i>Poecilia reticulata</i> ) Platy ( <i>Xiphophorus maculatus</i> ) Rainbowfish ( <i>Melanotaenia and Goniistius</i> ) Swordtail ( <i>Xiphophorus helleri</i> )
8.3	Florida coral reef (summer)	<b>Alkalophiles pH 8-9</b> total hardness 300-450mg/litre CaCO <sub>3</sub>
8.5	— —Lake Tanganyika	African Rift Valley Lake cichlids (Such as <i>Haplochromis</i> , <i>Hemichromis</i> , <i>Julidochromis</i> , <i>Lamprologus</i> , <i>Melanochromis</i> , <i>Pseudotropheus</i> , <i>Tropheus</i> etc.)
9.0	—	Marine fish and invertebrates

of the water type they live in. Different fish species have evolved for millennia in different specific water types, their bodies and processes have developed accordingly. It is obvious, therefore, that to produce the best possible healthy environment for your fish, you should try to provide the water type which they evolved in. The simplest way to do this is to find out what type of water is supplied to your tap and select fish with the requirements which match it. Alternatively, you have to adjust the features of your tap water to the requirements of the fish you choose (see later).

Now, I don't live on another planet. I know most community aquaria are a pick and mix of the fish which grab the owner's fancy and I know that information on the natural conditions that different fish come from is scarce. That is why I have supplied the table below. Fish can live in water types which differ quite remarkably for their natural water if they are slowly acclimatised. Different fish species differ markedly in their ability to deal with different water types. This is normally dictated by how stable the environment was in which they initially developed.

Fish like Rift Valley Cichlids and Marines live in huge areas of water which are not readily influenced. Water conditions, therefore, remain very stable and they cannot deal with changes easily, which is why they are known as sensitive species! Other fish live in smaller water bodies, which are influenced by heavy rainfall and drought, which considerably affects the water's characteristics. To survive, they had to develop processes to deal with these changes, so they are more tolerant of a wide range of water types and aquarium conditions. However, as a general rule fish kept in aquarium conditions which match their original aquatic environment will never do as well in terms of disease resistance, colour, size and breeding behaviour. Incompatible water conditions may not be the major cause of failed fish keeping, but it is another significant nail in the coffin.

#### What are these water features?

##### Dissolved Salts —

This is an easy concept to understand within the context of sea water where the predominant salt is sodium chloride (the stuff you used to shake on your food before the health fiends scared you off). Sea water is actually much more complex, containing different quantities of nearly every known element. Dissolved salt content of sea water is called salinity, and is measured in terms of specific gravity. There are dissolved salts in fresh water, but here the term tends to confuse people. We are really talking about various minerals and elements dissolved in the water. The most abundant minerals are calcium and magnesium salts, and the amount of these present in water is called the water hardness.

As we said earlier, the amount of water hardness present depends on the rock type that rainwater comes into contact with. Chalk and limestone are made up of calcium carbonate, which readily dissolves into rainwater, forming calcium bicarbonate and making the water hard. How much dissolves into the rainwater and how hard the water becomes depends on the contact time with the calcium-rich rock. Some water is pumped up from bore holes in chalk where the water has been for a very long time, so this water is extremely hard. Other rock types like granite, which typically make up mountainous and moorland areas, are almost completely insoluble and so add no hardness salts to the water and so it remains very soft.

Hardness is easily measured with readily available test kits. The two measurements used are milligrams per litre of calcium carbonate or German units, degrees DH (see table\* for a classification of water type). Table \* shows which fish prefer hard, medium and soft water.

Part II will be continued in next issue

## Heat That Water ...

by Dr D.M. Ford, Aquarian Advisory Service

THE community tropical aquarium requires a temperature of 24°C (75°F) plus or minus a degree Celsius, to average the varying needs of a wide variety of fishes. The marine aquarium should be slightly higher, but absolutely constant for the coral fishes to thrive. In practice, the Aquarian Laboratory has found 27°C (80½°F) to be the preferred temperature for most marine fishes and invertebrates.

Coldwater fish (common and fancy goldfish, orfe, small koi, bitterling and minnows) do well at room temperatures if the water is well oxygenated, so the water does not require heating. However, if such fish are to be bred and the fry encouraged to grow rapidly, some heating may be needed. Especially in fish-houses, which may be an external hut or garage etc. Breeders of fancy goldfish can simulate springtime by controlling the lighting and including a small heater to raise the temperature from a cool 10°C (50°F) to the ideal 18°C (65°F).

Coolwater fish include the temperate zone species such as the North American fishes and some tropical species that live in water cooled by mountain snows. Most tolerate 20°C (68°F) so the modern centrally heated home is ideal for this type of aquarium and supplemental heating is not required.

Brackish water tropicals (scots, mosos, black mollies, etc.) prefer 22°C (72°F) but a wide tolerance (plus or minus 2°C) is accepted, so heating is needed except in the living room that is always kept warm.

The breeding tank for tropical species will certainly need heating, many species will not spawn at their normal temperature and a rise of 5°C (9°F) is

often required. The fry grow better too at such elevated temperatures.

Methods of heating have changed over the years. Early aquarists used slate bottomed tanks with a paraffin flame underneath. Even when I was a lad, aquarists used 60 or 100 watt light bulbs under the tank to maintain temperature. They were housed in a light-proof box usually filled with sand to help dissipate the heat, with the tank placed on the top. When a light bulb failed (falling tank temperatures) the replacement meant moving the whole aquarium!

Nowadays modern technology has made water heating a simple and reliable task, but ... there are electrical mains driven bi-metal strip heaters, electronic controlled heaters, low voltage cable heaters and under tank plate heaters, all by many different manufacturers giving a bewildering choice for beginners.

The most popular choice is the combined heaterstat based on a bi-metal strip contact. This is because it is reliable and cheap and although it can suffer from ageing (usually the electrical contact points become pitted or water enters via old plastic seals) it is cheap enough to have a spare standing-by. The modern version of this unit developed from the separate heater and thermostat. These early models were not separate for technical reasons but to avoid purchase tax! The static heater did not attract the tax like the 'moving' thermostat and so the separate units were cheaper than the combined model.

The latest versions contains silica sand to dissipate the heat from the heater coils, which considerably lengthens its life.

## Heat That Water ...

(continued)

Silvered contact points show less tendency to form pits or stick together. Many models include a neon light to show when it is working, which helps adjustment of course.

The heart of the unit is the bi-metal strip. This consists of Nichrome (Nickel and Chromium) wire pressed into a strip such that each face has a different metal layer. As metals warm up, they expand at a rate that is unique to that particular metal. The difference in expansion between the two metal faces causes the strip to curl and so even a small rise in temperature will make the strip curl into the 'open' position, i.e. no electrical contact. No current flows to the heater so the unit cools down and the strip uncurls. The problem then is that the electrical points will eventually almost close, allowing electricity to spark across the gap, giving almost welding conditions. To overcome this problem a permanent magnet is built into the points area so the metal strip snaps shut when the uncurling brings it close to the magnet. When curling as it heats-up, the reverse happens, the magnet loses its grip and the strip springs open. Although an old principle it is the modern powerful ceramic magnets that have improved this action.

This traditional heaterstat uses glass in a 'test-tube' style because nothing has proved as water-tight or resistant to the thermal shocks. When the UK Electrical Appliances (Safety) Regulations came into effect a few years ago manufacturers found that they needed to double insulate the internal wiring and contacts. Ingenious devices appeared ranging from double glass tubes to metal sheaths, but all failed for various reasons. Nothing proved as effective as the single glass tube. With EEC Regulations, now replacing UK requirements, the traditional heaterstat is again that single tube but made from hardened glass to protect you and the fish.

The most modern system available is the rather expensive low voltage cable heaters. These use a 250 watt, 42 volt transformer that connects via water proof joints to a cable in various lengths to suit the size of the aquarium. The 42 volt cable is buried under the gravel (which is something one cannot do with glass heaterstats) where it cannot be seen, but it warms the whole base giving a gentle and very uniform heating of the bulk of the water. It is claimed that the plants grow better in the warm gravel. A probe is necessary to monitor the water temperature with an electronic switch to operate the transformer. Such controls are precise to 0.1°C and the cable itself is never more than 2°C warmer than the aquarium. This is the best advantage over the glass heaterstat because some of the larger fish can burn themselves on a traditional mains heater. (Specialist fishkeepers such as cichlid owners, encase heaterstats in pipes or use glass dividers to avoid this problem.)

Heated pads are also available to base heat the tropical aquarium using mains electricity or low voltage systems. The main problem with these devices is the great weight of the tank and water and the obtrusive design of some metal pads designed to withstand the weight.

Space heating for fish houses allows other types of heating methods, from butane gas heaters to electric fan heaters. When paraffin was cheap many a fish-house was heated with burners, but they were dangerous. Fumes were a problem (for the fish too), but the major drawback is that water is produced giving condensation that dripped from the ceiling shorting the lights and ricting the tank supports. The large breeding houses in some European countries use banks of tanks placed on centrally heated pipes. The heating bills are enormous and staff

need to work in bikinis! For the home based fish-house the modern electric fan heater coupled to an air thermostat (as sold for greenhouses) is very effective especially where good insulation prevents excessive heat loss.

Heat loss from water is always slower than from air, hence the best heating system remains the glass heaterstat within each individual tank. Occasionally complex diagrams can be seen in articles on how to heat several tanks with only one thermostat ... these are fraught with danger and control is never as efficient as the individual tank heaterstat.

Whatever system is used the temperature must be monitored so a thermometer is an essential part of all aquarist's accessories. Here again technology has helped improve precision and lowered price with the simple to apply and read digital thermometer strips. The latest versions have 'cling' backing rather than impact adhesive so they can be easily removed and reused.

In fact technology marches on and even better, more reliable, longer life, precision control heaterstats are being developed by all the world's manufacturers ... just watch this space!

#### Temperature Conversions:

Celsius (Centigrade) value x 1.8 + 32 = value in Fahrenheit.

Fahrenheit value - 32 x 0.556 = value in Centigrade.

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## NEW AWARD Acknowledges Endeavour by Individuals

by Tracey Masters, Marketing Manager, Interpet Limited

A new award, by pet and aquatic product manufacturer Interpet, to acknowledge outstanding contributions of individuals towards the fishkeeping hobby, has been presented by the company to Dr David Ford, senior consultant of Aquarion, and Joe Nethersell, chairman of the Federation of British Aquatic Societies.

Dr Ford and Mr Nethersell were both recipients of the award, introduced this year and presented during a dinner at the Supreme Weekend of Fishkeeping, held at Sand Bay in November.

Remarked Mike Clarke, special projects manager of Interpet, "Dr Ford has been a stalwart of the industry for several years, and has been responsible for a great deal of progress of the hobby, which has helped to make fishkeeping a more pleasurable and rewarding pastime."

Of Joe Nethersell, Mike praised his unending efforts on behalf of FBAS: "Joe is always around when there is work to be done and, with an organisation as large and extensive as FBAS, there is never any shortage of work. His efforts, in support of the hobby and the hobbyist, have been unstinting."

Nominations are invited for next year's Interpet Award, open to any individual in the trade or the hobby who has made a significant contribution to advance the fishkeeping hobby as a whole. Nominations should be addressed to Mike Clarke at Interpet.

Over 1500 people visited this year's Supreme Weekend, which was held at

Portin's Sand Bay Chalet Hotel, near Weston-super-mare in November, and organised by FBAS with the cooperation of Interpet.

"The event was very well received by the trade and public alike," remarked Mike Clarke. "A very important aspect of the show is the support given to retailers, and the formula proved extremely successful."



Dr Neville Carrington, centre, chairman and group managing director of Interpet presents the first Interpet award to Dr Ford, left, and Joe Nethersell. The trophy was introduced at this year's Supreme Festival of Fishkeeping to acknowledge outstanding contributions by individuals, towards the fishkeeping hobby.

## FBAS BOOKS



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FBAS 'Iron-on' Transfers	0.35p
Lapel Badges	£1.00
(Button Badges (FBAS - 20 for Size)	
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## Twilight Spawning of the Moonlight Gourami

by Doug Ridgewell, Southend & District A.S.  
and member of Anabantoid Association of Great Britain

It is an exciting time for the members of AAGB with a number of the rarely seen anabantoids coming into the country. It is so easy to turn over tank space to the new fish and neglect the breeding programme of the old favourites.

One of mine is *Trichogaster microlepis*, commonly known as the Moonlight Gourami. It arrived in Britain from Thailand in the early 1950s and is often seen in our local suppliers. Although they have been spawned on a number of occasions, I have not heard of many being raised.

I first got three from my local dealer; one 8-inch male and two females of 7 and 5 inches. I was told the male had spent many years on the show circuit and in his prime must have been a magnificent fish. The body of both sexes is silver blue in colour, dorsal and caudal fins are also silver to clear. The dorsal fin of the male is longer than the female's and his ventral feelers are a red-orange which also runs along the edge of his anal fin. If he is not in good condition the orange fades and he can look very similar to the female because her ventral feelers and the edge of her anal are clear.

When I got them home I put them in a quarantine tank for two weeks to be on the safe side. All was well, so they were transferred to three separate tanks with *T. leeri* and *T. pectoralis*. *T. microlepis* are very peaceful and I have kept them with most of the smaller anabantoids with no problems, but the aquarist who prides himself on a well planted tank and a male who decides to build a nest, won't see eye to eye. He does such a good demolition

job on the plants that they will all end up in his nest.

Like all *Trichogaster* they like any good quality dry food. I feed it twice a day and for conditioning I added, once a day, a good quantity of frozen bloodworm as well. The first breeding tank I used was 36 x 12 x 15 inches. I cleaned it out with bicarbonate of soda and filled the tank with tapwater, pH 8.9, hardness 300ppm, and put an airstone at each end. These were left on for a week. Large amounts of *Cabomba*, *Ceratopteris* and *Valisneria* were left floating in the tank, this appears to adjust the water chemistry a little. I put a hood with a two-foot fluorescent tube on the tank and left it on for 12 hours a day.

On the evening of the seventh day I turned off the airstones and placed the male and the larger female in the breeding tank. The temperature was set at 80°F, 3° higher than the conditioning tanks which they had occupied for a month. I gave the fish 10 minutes to settle down, then I turned the light off. Over the next three days the male was busy building the biggest bubble nest I have ever seen in the confinements of a tank, ripping up all the plants and pushing them up into his nest. It covered all the surface of the tank and in the middle it raised up 5 inches. I did not feed the fish while they were in the breeding tank.

The female stayed in a corner while the male built his nest, he didn't take much notice of her until the 4th morning then he tried to peacefully tempt her to the nest. Unfortunately she would not be led into temptation and as he became rather angry and aggressive I had to remove her

to prevent her demise. Both fish were replaced in their holding tanks for the next three months and in this time, the female died. She showed no signs of injury or illness so I put it down to old age.

Over the next 18 months I tried 3 more attempts at spawning the male, this time with the smaller female in the same set-up as before. All failed and he did not even build a nest. Although the female had grown 1½ inches since I got her, I put the failures down to her youth. Even so, I thought I would try something slightly different the next time.

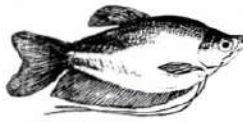
This time I did not put a light over the tank and allowed the fluorescent lights on the ceiling of the fish house, which are left on all day, to light the tank. I then covered half the sides and top of the tank with black plastic. This, of course, put half the tank in darkness. I put the pair in the breeding tank in the evening as before.

In the morning, the female stayed in the lighted half of the tank, while the male spent long periods in the dark half. After 3 days I lifted up the plastic to see what was going on. The male had built a small nest with bubbles and plants, but he had not put as much effort into it as before, so I replaced the plastic and waited. After 5 days I was beginning to think it was going to be another failure, so it was a great surprise on the morning of the 6th day when I turned the lights on and found the tank full of free swimming fry. Unfortunately, I had missed the courtship and so was very disappointed.

I removed the adults back to their holding tank and started to condition them again. The water in the fry tank was carefully siphoned out until the water level was down to 4 inches. The black plastic was also taken off the tank. I gave one feed only of hard boiled egg yolk squeezed through a handkerchief and also put half an Infusyl tablet at each end of the tank. After 4 days I carried out a water change, dropping the level 1 inch

and replacing it with tap water that had been standing 48 hours.

After the water change I dropped in another Infusyl tablet. At 17 days I started feeding brine shrimp once a day and increased this to four times as soon as I saw they were taking it. I continued water changes every 3 days and when the fry started to take gulps of air after 3 weeks, I still removed 1 inch of water during my water changes, but replaced it with 2 inches until the tank was filled. I have used this programme with very good results on other anabantoids, but this time, for no apparent reason, I was left after a month with only 3 fry, 2 males and 1 female. Although slow growers, at between 3-4 months they really take off and at a year old the males were 6 inches and the female 5 inches.



*Trichogaster microlepis*  
(Moonlight gourami)

As my aim is always to raise as many healthy fry as possible from one spawning, I decided to try again with a 72 x 12 x 15 inch tank. As before the fish were placed in the tank in the evening and as soon as I put the lights on in the morning, the male started to build his nest under the plastic in the dark end of the tank. The female kept well out of the way while he was building and he ignored her. At 7 o'clock in the evening she suddenly made a dash to the nest. The male immediately embraced her, eggs were released and when they parted, the female dashed back to the other end of the tank while the male made sure the eggs were placed securely in the nest. The spawning act was repeated every 3-7 minutes for the next 3-4 hours and I finally

### Twilight Spawning of the Moonlight Gourami (continued)

removed the female when the male started to chase her away from the nest.

The eggs hatched in 24 hours and on the morning of the 3rd day the fry were free swimming. As before the male was removed and this time I carried out 2 gallon water changes. The routine was as before, the lowered water level being raised an inch every day when the fry come up for their first air. At this point baby fry food was introduced as well as live food. Again they really took off after 3 months. After 4 months of daily water changes the sight of 400 fish swimming up and down a 5-foot tank made all the hard work worthwhile.

For some time I believed that only fully grown fish would breed, but I was proved wrong when a pair of 4 inch fish gave to a friend immediately spawned. He did not raise many, but at least this did prove 10 month old fish can spawn.

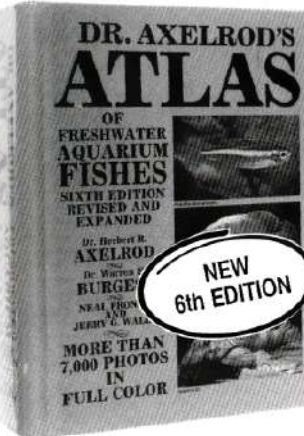
To sum up, although it is not necessary to use black plastic on the tank, it certainly helped obstinate fish to breed. I do think daily water changes are essential to raise a good number of fry though. At the moment I have 3 adult pairs of fish and soon must get down to spawning them again, but as I said at the start of this article, with so many new species coming in, my tank space is at a premium.

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## Book & Video Reviews



by Chris Cheswright  
Southend, Leigh & District Aquarist Society

### Review of *Interpet Guide to Livebearing Fishes* by Peter W. Scott

This book accompanies the others in the series and gives a good deal of space to general fishkeeping advice, useful for the novice fish-keeper.

It has a good introduction on the concept of what a Livebearer is and includes facts about the extensive existence of marine livebearers amongst the sharks and other bony fishes.

Pages 38 through 39 have some easy to follow diagrams of the development of embryos in the various groups of freshwater livebearers, indicating that we are not just dealing with one evolutionary line. There is also a section on the genetics of Guppies introducing the many cultivated Mollies, Platies, Guppies and Swordtails that have been developed within this group of fish.

The book also looks at the community aquatic and suggests which fishes not to put together, including the prevention of hybrids and the general 'rough' Goodeids.

There are 53 pages devoted to the fish species; this is presented in family order; Hemirhamphidae (Half beaks);

Anablepidae (Anableps); Goodeidae (Goodeids) and Poeciliidae (Guppies, Swordtails, etc.) For each species described information is given on diet, features (how to sex for example), care & breeding suggestions and a colour photograph for identification.

One or two odd features are described such as the one sidedness of *Jenynsia lineata* which has presented problems to breeders as it can only swing its gonopodium in one direction, left or right. The Pike Livebearer *Belonesox belizanus* which only eats live fish and *Poecilia formosa*, a species consisting entirely of females.

The fish described are varied but generally kept to those that are available in this country. But inclusion is made of some that must now be kept in aquaria as they are possibly extinct in the wild, *Xiphophorus couchianus* whose habitat has dried up due to over use by man and *X. gardani* which is endangered.

All in all a book with information for the beginner and specialist alike and well worth purchasing.



## Book & Video Reviews

(continued)

you've gained a little experience. Although informative it doesn't actually grab you and make you want to rush out to the nearest dealer. Maybe it has a better role as a rental, or borrowed from the dealer on deposit against your first aquatic spending, rather than as an outright purchase.

Readers may well be familiar with *Beautiful Underwater Worlds*, the video produced by the Aquarist Advisory Service. It may not be too well known that the Company, following in their tradition of telling the story of product development, has also produced a shorter video programme showing the designing and introduction of the new range of aquarium equipment and also the Company's consultations with experienced aquarists during the new equipment's development and testing. Also shown is the Company's involvement with various Sea-Life Centres, bringing valuable information to would-be fishkeepers. This video never actually reached the sales stage, as it was produced purely for the benefit of traders during the new products launch; however, the Federation has been fortunate in obtaining a copy for its *AquaTalk* series should any Society wish to borrow it and so examine the new products more closely at their leisure and in the company of their members. Many of the design features of the new equipment represent new thinking and having seen this video will enable aquarists to get full benefit from the equipment more easily. Thanks are due to David Ford for making the video available.

**Creating an Aquarium** by John Doves is different again. The opening

shots of natural habitats of fishes certainly get you in the mood for keeping fish and this programme then proceeds to do so in no uncertain manner — no matter what form your fishkeeping might take, tropical, coldwater or marine, they're all covered in this hour long tape.

The programme is high on practicalities coupled together with very clear diagrams (fish sticking levels, Nitritrate levels etc.) which explain the necessities without fuss or over-technical language. The main virtue and advantage this video has over even the most lavishly illustrated book is that you can see how things are done, physically how easy or difficult they are and even how long they take. The close-up details are very well done and wiring a Cable Tidy should hold no future terrors for anyone once they've seen this programme.

The tropical freshwater aquarium is taken as a basic demonstration model with variations being made later to accommodate coldwater fishes (no heaters, but details of breeding including hand-stripping) and marines (no plants but extra details on mixing water and choices of corals).

Being an hour long, the programme (and viewer) benefits by having that little extra time to develop subject matter discussions further where they merit it. There is a wealth of information and the programme will remain an excellent reference guide well after you've set up your first tank — whichever one you choose there's always two different ones to try later!

## HAVE YOU SEEN?



Making a change from books, aquarists now have a choice of videos to look at; these range in subject matter from "how to do it" to true undersea activities and other location shots. Here are three to choose from, each quite different from the others and all serving to provide information at different levels of experience.

Right at the start comes **AQUALIFE Guide to Fishkeeping** (VPS 10-£12.95). This looks at the hobby from a 'total lack of fishkeeping knowledge' point of view leading you by the hand into unravelling some of the basic mysteries you might face when starting the hobby — faced with an aquatic superstore of equipment would you know where to start? Alright, you might well know where to start now, but

would you have then? Subjects such as, *Choosing the Tank, Filtration, Heating, Lighting, Choosing the Fish, Feeding & Maintenance* are all clearly explained but, due to the short overall duration of the programme (around 30 mins) there is little time for any great details. As a brief introduction to fishkeeping it probably will serve its purpose very well but it won't be a tape you'll need to go back to once

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## Marginal & Moisture Loving Plants

by Harry Hooper

**F**OR newcomers to water gardening the task of selecting the correct varieties of plants can sometimes be baffling, for example the labelling of plants at nurseries could be misleading to a novice water gardener, i.e. marginal plants, deep water aquatics, poeaside plants, moisture loving plants, etc. You must appreciate that all these different groups of plants in order to thrive properly all require various growing conditions. Therefore before you descend on an aquatic plant supplier it would be to your advantage to "swat" up on water plants, obviously this will help you single out plants that will flourish in your particular design of water feature. If within your garden you are fortunate enough to have a natural stream or pond with abundant damp and boggy areas you will find an extremely wide range of plants to choose from. For most gardeners the only other alternative to create a water feature is to install a water garden using either a flexible liner or a pre-formed pond. In many designs of water gardens, the construction of a bog garden has not been considered, this will obviously make your choice of plants limited. Planting the water garden should commence with a well chosen selection of water lilies (nymphaea) making sure the varieties you choose will suit the depth and size of the pond. Apart from lilies you could consider other deep water aquatic plants such as Water Hawthorn (*Aponogeton Distachyum*) or Golden Club (*Orontium Aquaticum*) the latter should not be planted too deep. Then you come to the marginal plants for growing in the shallow areas of the pond. Again remember, the size of the pond will determine what plants you can grow as many of the marginal plants are fairly large and invasive growers. For example water Iris vary in size considerably, i.e., Iris Pseudacorus or the larger (*Caltha Polypetalis*) are always popular due to their early spring flowers. The double for

*Caltha Palustris* Flora Plena or the white variety *Caltha Alba* are even more popular with the majority of pond owners. Blue Pickerel (*Pontederia Cordata*) a striking plant of American origin with soft blue flowers amidst shiny green foliage is a must for any pond.

There are many forms of reeds and rushes to tempt the water gardener, the problem with this type of plant is that the majority are strong growers, for example the Common Bulrush (*Typha Latifolia*) is a very large plant a better choice would be (*Typha Minima*) the dwarf species more suited to the average garden pond. The Arrowheads the (*Sagittaria*) family is another good choice. (*Sagittaria Satifolia*) or (*Sagittaria Japonica*) both have single flowers. The double flowering (*Sagittaria Japonica Flora Plena*) is far more outstanding.

There are many more varieties of plants suitable for pond margins this you will realise when you are plant hunting. However, when it comes to plants for the bog garden the list will seem endless. Moisture loving Iris offer a very wide selection (*Iris Kaemferi*) now known as *Iris Esanta* is a perfect example with its many hybrid varieties. Other Irises like *Iris Sibirica* or *Iris Setosa* all relish a damp environment. There are many varieties of primula suitable for the bog garden such as the beautiful *Primula Vialii* or *Primula Denticulata* both well worth considering as bog plants.

Some waterside plants are grown for their impressive foliage alone, a good example would be *Hostas*, *Rodgersia* and *Ferns* that will blend nicely with all the aquatic plants at the waters edge.

When planting a water feature always remember that this could well be the centre-piece of your garden so careful planning on plant varieties beforehand ensures that when they reach maturity they will blend together.

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## NAME CHANGES Of North American Shiners

Working on the premise that given time nothing remains the same. It transpires that there has been a considerable number of name changes within the North American group of fishes that we loosely allude to as "shiners", including the induction of some into new genera groupings.

As the vast majority of the currently available identification papers, books and drawings use the "old" names we feel it would only cause confusion if we suddenly use the new names and remove the "old" names from the 'W' size sheet. Therefore the Judges and Standards committee have retained the "old" names and publish a list of name changes, old to new and new to old. If you wish, this sheet can be removed and inserted as yet a further addendum into your SYNONYM Book. Book No. 19.

Our thanks to Vernon Hunt for carrying out the research and bringing the changes to our attention and for providing the information needed to compile the list. With the exception of *Pimephales collarchus*, which according to Vernon's researches is not a valid name, the information provided comes from two sources: T.F.H., and Peterson Field Guide to Freshwater Fishes by Lawrence M. Page, and Brook M. Burr, published 1991. The Freshwater Fishes alluded to in the title are, of course, North American freshwater fishes.

J & S Committee 1992

### AQUARIAN

### AQUACHAMP FINALISTS, Weston-Super-Mare 1991

Question Master + DAVID FORD, Aquarian Advisory Service  
(Winner — max score 10 correct) DAVID WOOD, Northampton Northampton & District A.S.  
Runners-up DAVID GOODWIN, Deaf Deaf & District A.S.; COLIN TWEDDLE, Whiteley Bay  
Cramlington A.S.; MRS. MARCIA FLINT, Stockton-on-Tees, Stockton-on-Tees, A.S.; B. HANNAH,  
Newcastle-on-Tyne, Gateshead A.S.; DEREK DOYLE, Dublin, Irish Tropical Fish Society



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## NAME CHANGES

to cut out and keep for your files

J & S Committee 1992

OLD NAME	CLASS	NEW NAME	NEW NAME	CLASS	OLD NAME
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### Western-Super-Mare 1991



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