



DECEMBER 1987 95p

AQUARIST

AND PONDKEEPER

FISHKEEPING AT ITS VERY BEST. ESTABLISHED 1924

SPECIAL
CHRISTMAS
FEATURES,
COMPETITIONS
AND CROSSWORD
SOFT OPTIONS

KEEPING CHOCOLATES
SINGAPORE SPECTACULAR

AQUARIST

FISHKEEPING AT ITS VERY BEST. ESTABLISHED 1924

DECEMBER 1987

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COVER STORY

Photograph courtesy of Tetra

The Queen Angel (*Holacanthus ciliaris*) is a majestic fish for large tropical marine aquaria. The common name for this species is derived from its distinct blue-ringed "crown", beautifully shown in our cover photograph. This feature helps distinguish *H. ciliaris* from its close relative, the Blue Angel (*H. isabellita*), in which the crown is quite indistinct. Other distinguishing characteristics include bright yellow pectoral and caudal fins in *H. ciliaris* (only edged in yellow in *H. isabellita*). The Queen Angel is reported to grow up to 18in (45cm) in the wild, but remains considerably smaller than this in aquaria where it attains its full adult coloration at a length of around 4in (c.10cm).

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THANKS FOR A GREAT 1987 — HERE'S TO '88

It's been an interesting year — hectic, yes, but very interesting. It's also been, I am delighted to report, a highly successful one for *A & P*.

At the end of the day, no matter how many bright ideas we may think we have, it all comes down to whether our readers accept or reject our efforts. Suffice it to say that we owe you an immense vote of thanks — you have supported us to the hilt, and we are grateful for it.

Not only that, but you have also regularly written in with positive suggestions on how to make a good magazine better... and we have responded by putting as many of the feasible recommendations into practice as possible.

Two welcome outcomes of our co-operative efforts are a constantly improving magazine, both in looks and in content, and sales figures which continue on the up and up.

There's more to come, of course. For instance, as from next month, there will be an extra regular feature for marine hobbyists (over and above our monthly marine articles) based on a similar format to **Stephen Smith's** extremely popular **Coldwater Jottings** page which now elicits correspondence from all over the world. **Seaview**, as the new series will be called, will be under the watchful eye of **Gordon Kay**, a regular and respected contributor to *A & P* over the past few years.

Again, as from January, **John Cuvellier**, our Koi expert, will be alternating his thought-provoking articles with an equally thought-provoking "mixed-bag" Koi page which promises to be both enlightening and enjoyable.

Our comprehensive and colourful **Beginners' Supplements** provided us with some of our most resounding successes of the year. The idea of providing self-contained, authoritative, pull-out, occasional guides clearly fell on fertile ground. Demand for these **Supplements** has been exceptionally high, so watch out for a further selection in 1988, this time aimed at the more experienced aquarist and pondkeeper.

In fact, watch out for all sorts of goodies, ranging from exciting competition prizes and gifts, to authoritative beginners' and "state-of-the-art" articles from the very best authors available, both on the UK and international fronts. We'll also be bringing you up-to-date news of the very latest products, books and events, and will continue to support clubs and societies via our monthly **News and Diary Dates** page.

And, of course, our open invitation still stands, so please keep your letters coming. Our mailbag has been huge over the past year... let's keep it like that (or even improve on it) over the coming months. While we will, obviously, respect requests for confidentiality, we would ask anyone

who writes in to include his/her name and address, thus allowing us, in turn, to write back with our own views and comments. If something pleases you, or annoys you, drop us a line. If you have suggestions, views, or comments to make about virtually anything connected with our hobby, we'd love to hear from you.

Finally, thank you all for a super 1987. Here's to an even better 1988. Have a peaceful and happy Christmas and a great New Year. **John Dawes**
Editor



ALL I WANT FOR CHRISTMAS . . .

"Friends, Romans and all other Latin-speakers . . . can any of you lend me your tape of Latin pronunciation? It is the bane of my life and if I can just listen to someone speaking the language, my Christmas will be complete and I will be happily studying into the New Year.

Now, I'm not a complete beginner in this language. At school, I was offered a choice. "All those girls who don't do cookery can join the Latin class." As the fine art of preparing anything edible comes about 60 places down on my list of life's rich pleasures (59th is baling out a broken down washing machine with a teacup), I took the classical option. For almost a year I studied this fine language — and then moved to a new school where cookery was second only to woodwork. I enrolled in the latter and had my first experience of sexual discrimination — my name was crossed off the 'boys only' list. I played truant during every cookery lesson and broke the house record for detentions.

And the Latin? I recall one earth-shattering sentence: "Marcus ad ludum ambulat". This means "Mark walks to school" — and doubtless does woodwork when he gets there. I've always felt that if Plato had had the slightest interest in Mark's scholastic travelling, I'd have had a flying start in philosophy . . . When I embarked on my gardening career, I learnt a great deal of Latin. Just name a plant and I'll supply the Latin — and know what it means. Just don't ask me to read the name aloud.

"Some people are so stupid when it comes to pronouncing plant names," my first boss confided jovially. "They tell me they want a Cotton-Easter!"

He roared with laughter and I sniggered nervously, sending an urgent request to the Almighty, "Please, please don't let him ask me how you pronounce it." He didn't and I later discovered *Cononaster* is pronounced 'Co-tony-aster'.

And so to fish . . . I don't have a library of books at my disposal, so my major source of reference is a huge German encyclopaedia. Whether from Teutonic pride or scientific prejudice, the majority of fish are listed under their Latin names, with no English equivalent. I appreciate the need for Latin.

By
AMANDA GRIMES

As a sort of aquarists' Esperanto, you can refer to a *Mastacembelus erythrotaenia* anywhere in the world — language is no problem — but would you want to?

What exactly do these scientific tongue-twisters do to encourage an interest in fish?



There's absolutely nothing wrong with *Euchilichthys guentheri*, of course . . . if only I could pronounce it!

Friends call in and gaze into the tanks. "What's that gorgeous fish by the wood?" I'm asked.

"Oh, that's a *Symphysodon aequifasciata aequifasciata*. Isn't he lovely?"

Their faces take on the same bemused look as the fish has. I wonder if the fish knows what we call it. There it is, swimming happily around when it meets a friendly Honey Gourami:

"Hello," says the Gourami, "I'm a *Colisa chuna*. Who are you?"

"How much time have you got?" mutters the Discus. No wonder they're difficult to keep . . .

Now you're safe if you can actually visit the shops. Faced with a tank of *Epalzeorhynchus kallopterus* you can just ask for one of 'those' and point. But if you're housebound, as I am, making enquiries by phone goes something like this:

"Have you got any *Astyanax fasciatus* (so far so good) *jequi* . . . *jequitin* . . . *jequitinhon* . . . No, I've got the wrong list. How about Zebra Danios?"

Which explains why I have most of the Zebra Danios imported into this country. I also have a large shoal of Black Tetras. I never use their Latin name *Gymnocorymbus ternetzi* — I sound like Manuel, explaining in broken English that "Jim no can rumba tonight".

I have a passion for loaches. They're friendly, playful and have beautiful shapes and colours. My collection includes *Botia striata*, *sidthimunki*, *howe* and *macracantha*. It doesn't include *Acanthophragmus "cononaster"*. My book tells me that breeding these last is possible — not if they have to be introduced first, it isn't. They'd die of old age before I got their names right.

Another thing I want for Christmas is killifish. These jewel fish have always fascinated me and I'm thinking of turning over some tanks to them. I think I'll give my boyfriend a list to take to the shops. I've sorted out the ones I want and there is no way I'm trying this lot on the phone: *Aphyocormion spiciferus*, *Epiplatys chaperi*, *ichthyoides*, *Fundulus notii notii* (sounds like I'm telling off a *Fundulus* — whatever that is).

I'd also like some *Pachypanchax playfairi*. If I could start with the *playfairi*, maybe someone would take pity on me and talk to me in my native tongue . . .

PRODUCT ROUND-UP

By Dick Mills

The Pet Trade and Industry Exhibition at Alexandra Palace (Part II)

SEABRAY

The dilemma of whether to advertise a new product while the existing order books are crammed full and production lines at full stretch, is one that many manufacturers would envy. However, this is the happy situation facing SEABRAY, the aquarium manufacturer. The new DOLPHIN aquarium is totally systemised for the successful keeping of both freshwater and marine species.

At the heart of the system is an Eheim 2052 Internal Power Filter which not only produces surface turbulence and desirable water currents, but also provides a secondary flow of filtered water (via an adjustable diverter tap and spraybar) to an overhead trickle filter for further treatment. A separate overhead reservoir enables a constant water level to be maintained automatically. The equipment previously described is supplemented by the inclusion of a protein skimmer for use in marine aquaria. All the 'hardware' (including a heater/thermostat unit) is housed in a compartment within the aquarium itself for optimum neatness; necessary maintenance is not only minimised but also easily performed. Full details of this superb new addition to the already renowned range are available from Seabray Aquariums, Unit 10A/1 Tunnel Estate, 726 London Road, West Thurrock, Grays, Essex (Tel: 0708 864425).

ALGARDE

Conventional feeding rings and surface-located worm-feeders have one disadvantage — they have limited access, many fishes missing out being excluded by more boisterous species. Now, you can not only feed your fish in midwater, with all-round access, but also with flake and worm foods at the same time if so desired.

ALGARDE have achieved this facility in their new COMBINED FLAKE AND LIVE FOOD FEEDER by firstly fitting a perforated dome to the top of the conventional cone-shaped worm feeder, and then by suspending the whole thing in midwater by means of a miniature rod and line. This novel solution to feeding problems retails at £1.38.

Details from Algarde Enterprises Ltd, Hall Lane, Uppminster, Essex RM14 1TT (Tel: 04023 71702).

SERA

Very often, searching around unearths a veritable, if unsuspected, gem. Amidst all



Diagrammatic view of Seabray's new systemised aquarium.

the bustle at Alexandra Palace, I came across a mine of information in a small 80-page booklet. Devoted to pond care, the POCKET ADVISER — THE GARDEN POND was on display on the SERA stand. It deals first with the planning, designing, siting, excavation and building of the pond before explaining the technicalities of obtaining and maintaining correct water conditions (including algae control). Water plants, marginals, fish, amphibians, reptiles and insects are all described. Diseases, their prevention and cure, are followed by a complete seasonal review of the pond. Just the stocking-filler for any coldwater fish-keeper. The recently introduced OXY-DATOR was also prominently featured.

Details of Sera products from: Sera Aquaristik.

PHILLIPS

Societies may remember assisting in the market research and subsequent testing for a new fish food recently. The product has now come on to the market. When the



PHILLIPS YEAST PRODUCTS LTD

word 'ULTIMATE' is used as an adjective or, as in this case, a proper noun to describe an article you have every right to expect something special. Unless all the groundwork, research and preparation that obviously went into the manufacture of the new fish food of the same name was for naught, then your fish will undoubtedly appreciate the new product. The flake food itself is based on a triple effect, echoed by the three distinct colours of the flakes: red is a high-protein growth and vigour flake, the protein content coming from eight separate sources to maximise assimilation by all fishes. An added 'ingredient' is APATONE a specially formulated appetite stimulant and attractant. Another advantage claimed for this 'attractability factor' is that there will be less uneaten food to foul the tank; more food in the fish means faster and better growth, and even shy fish should overcome their timidity to take this food. The green flake is, naturally enough, high in Vitamins of group B complex and amino acids derived from Brewer's Yeast. These maintain health and promote formation of proteins, this balanced combination of essential micro nutrients being particularly important for fishes in captivity. The remaining pale beige-coloured flake contains selected Multi-vitamins and trace minerals and supplies, as close as possible, the fishes' true vitamin and mineral requirements. Thanks to this long-term health and activity flake, many of the 'deficiency problems' found in fish such as loss of appetite, fading colours and skin disturbances should be minimised.

Aimed at being an acceptable food for fish, presented in the most practical manner, ULTIMATE will not cloud the water and has good floating properties coupled with variable-size flakes. In addition to each flake's individual nutritional characteristics, all three contain a natural colour enhancer to preserve and develop the natural colour and condition of the fish.

The food is available in a special Introductory Trial Size at 99p, while the Standard size (80g) retails at £3.95. Details from Phillips Yeast Products Ltd, Park Royal Road, London NW10 7JX.

TETRA

It's all buzzwords this month: next on the list is VITAL — TETRA's suffix for their new WATER CONDITIONER for CICHLIDS. One result of Tetra research into Cichlids shows that these fish are more adversely affected than other tropical species by water deficient in certain trace elements and water soluble vitamins. CICHLID VITAL supplies these essential items in exactly the right proportions and helps create the ideal environment for a thriving Cichlid collection. Providing the correct conditions at the outset (such as hard alkaline water for African Lake species) will actually increase the effectiveness of Cichlid Vital and the not inconsiderable effects of



its use include greater vitality, improved coloration and general appearance and the stimulation of breeding activity. Coupled with Tetra's recently-introduced Cichlid Food (see *A & P*, May 1987), CICHLID VITAL should get your Cichlids on the launch pad to success. The 250ml bottle (its increased concentration allows 500 gallons to be treated) retails at £4.40.

Details from Tetra, Mitchell House, Southampton Road, Eastleigh, Hampshire SO5 5RY (Tel: 0703 619791).

TECHNICAL AQUATIC PRODUCTS

Did you have problems with your pond this year? If so, you can equip yourself with a new range of pond treatments and be better prepared for any eventuality next year. TECHNICAL AQUATIC PRODUCTS have introduced the POND DOCTOR range of six water treatments. Each is contained in 250ml Easi-Dose bottles with simple diagnostic instructions.

POND DOCTOR Algaecide is specially formulated to deal with a wide range of algae, including the infamous blue-green variety and will be effective in 3-14 days without harming healthy fish or plants. POND DOCTOR Medicine for Bacteria may be used as an all-purpose disinfectant and is effective against Finrot, Body Rot, frayed fins, Pop-eye, Velvet and other miscellaneous infections. POND DOCTOR Conditioner/General Tonic is designed to boost your fishes' health and help maintain them in tip top condition. Special additives protect fish from infection following physical damage caused by netting and other scrapes. The vitamins, carbonates and phosphates promote a stable pond and healthy, lively fish; regular use improves the vitality and sexual vigour of the fish.

POND DOCTOR Dechlorinator neutralises chlorine and chloramines, renders heavy metal safe and prevents nitrite poisoning, and avoids exposing fish to raw tapwater. POND DOCTOR Parasite Remedy will be effective against Skin- and Gill-Flukes, Fish Louse (*Argulus*), Anchor Worm (*Lernaea*) and other external parasites. Although safe to use with most fishes, Orfe and Rudd should not be treated with this remedy. POND DOCTOR Fungus Medicine is designed to attack fungus on fish and disinfect the pond simultaneously. (This remedy should be used to treat Orfe and Rudd affected by parasites, rather than POND DOCTOR Parasite Remedy, see above).

All six treatments retail at £3.43 each, and further details are obtainable from Technical Aquatic Products, 1a Meadow Street, Avonmouth, Bristol BS11 9AS (Tel: 0272 692345).

SHH! KEEP IT QUIET!!

Those were the orders given to the R & D people at Atlantis as work began on their latest product. Given not only for the best of commercial reasons, the words take on another significance when you apply them to the actual product in question — a brand new series of Air-pumps. To be based on the vibrating-diaphragm system of operation, the first priority was to minimise the noise output under aquarium-operating conditions (after all, aquarium-keeping is amongst the quietest of hobbies). The other requirements were, of course, quality control, very good performance and competitive prices.

A specially designed, strategically internally-ribbed plastic case provides both integral strength and cuts down resonances and transmitted vibrations to the pump base. Resonances occur within all vibrator pumps, particularly within the air-chambers, and is due to the 50 cycle/second frequency of the alternating voltage. Atlantis have dramatically cut this down by a clever piece of engineering which reduces turbulence and produces a smoother output — they call it a laminar air-flow system (patents pending) — and further noise reduction is achieved by the use of special materials in the construction of the air-chamber itself.

This 'obsession' with noise reduction is continued within other parts of the pump: four resilient rubber feet cushion the pump cutting down transmitted vibrations to a minimum; the outlet nozzle(s) are isolated within a vibration-limiting surround, and the coil is mounted in position by two bolts (single-bolt mountings on previous models proved to be insufficient in preventing gradual loosening occurring).

Two substantially strengthened holes are provided in the end of the pump body for hanging, and air is drawn into the filter through a felt filter pad (don't forget to clean it periodically!).

To keep production (and maintenance) costs to a minimum, clever design (again) resulted in a single diaphragm size being used for all the pumps in the new range. Two nice touches in the presentation —



each pump comes with a spare diaphragm (two in the case of double outlet models), and there is a better than usual instruction leaflet giving not only operating guidance but also maintenance hints and details (how many other pump manufacturers show you how to change the diaphragm?), and explains the importance of aeration together with biological filtration notes.

To the pumps themselves: four models are available — 1000S, 3000S, 6000S and 9000S. The 1000S is ideal for an 18in tank using an undergravel filter, or a box filter and airstone (up to 4in). The 3000S will be suitable for a 30in tank using an undergravel filter, or a box filter and airstone (up to 6in).

The 6000S and 9000S models are identical in maximum output (the 9000S has a variable output control) and will more than adequately power a 48in undergravel system or box filter, airstones up to 12in or a combination of filtration with an airstone (up to 6in).

Thomas's (A division of Mars GB Ltd), Oakwell Way, Birstall, Batley, West Yorkshire WF17 9LU.

PENN-PLAX

In our November issue we may have given the impression that Penn-Plax products were only available from one source. This is incorrect. The Penn-Plax range is also available through Cagex Accessories Ltd, The Bury Farm, Pednor Road, Chessham, Bucks (Tel: 0494 786759).

AQUATIC POSTCARDS

Receiving postcards is generally a pleasure, even if the writing of the sender might take some deciphering. A new range of full-colour postcards, just released, will leave no doubt as to the tendencies of the sender (or perhaps those of the recipient) for they all depict scenes dear to the heart of every aquarist — aquatic life — whether it be fish (tropical, coldwater or marine), plants, invertebrates, reptiles or amphibians. The first sixteen are available from your aquatic dealer at modest prices (40p each) and these are ideal for that personalised greeting card, for your own collection, or you can even use them at Club evenings via an episcopo projector for a D-I-Y lecture or impromptu quiz. The cards are the brainchild (and original photographic work) of our Editor John Dawes — I wonder if he'll be offering a prize for the most suggestions for their use?



PRODUCT ROUND-UP

TWELVE BOOKS FOR CHRISTMAS

1987 could be seen as the year of the Atlases' as, hand on the heels of AXELROD'S MINI-ATLAS (T.F.H. £19.95 reviewed *A & P*, August 1987) comes Hans Baensch's ATLAS OF AQUARIUM FISHES (reviewed this issue).

A relative newcomer to publications, Tetra, only recently released MARINE FISHES (£14.95, reviewed this issue) — a look at some popular marine species from within their own environment rather than through the usual front glass of the aquarium.

Pelham Books weighed in with AQUARIUM FISHES by Donald Wilkie (£14.95), a general book including freshwater and marine species, written by a practising professional public aquarium Director. (Reviewed *A & P*, May 1987).

Hamlyn regularly release high quality aquatic titles and their latest is an ideal candidate for the Christmas list — John Dawes' FRESHWATER AQUARIUM FISHES (£8.95, reviewed *A & P*, November 1987).

T.F.H. maintained their diverse coverage of aquatic subjects with two quite different books on marine life — SALTWATER AQUARIUM FISHES, 3rd Edition

(£11.95, reviewed *A & P*, October 1987) and CEPHALOPODS OF THE WORLD (£39.95 reviewed *A & P*, September 1987). On one hand, a valuable aquarium book, on the other an immense treatise of quite different invertebrates which make equally fascinating reading.

Salamander again provided a good cross-section of aquatic titles (all reviewed in *A & P* this year) in the Fishkeeper's Guide series — FANCY GOLDFISH, FISH BREEDING, KOI, LIVEBEARING FISHES. By the time you read this, their long-awaited *PRACTICAL ENCYCLOPEDIA OF MARINE FISHES will be available (£12.95).

These are but a few of the many books that caught the eye and which will make welcome gifts this Christmas; if none are quite to your taste, then a flip through back numbers of 1987 *A & P*s (in *A & P* Binders of course, another good Gift idea!) will reveal many more to be considered. Happy Christmas reading!

Editor's Note

*THE PRACTICAL ENCYCLOPEDIA OF MARINE FISHES is written by Dick Mills and will be reviewed in *A & P* as soon as possible.



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SINGAPORE SHOWPIECE

The re-opening of Singapore's Van Kleeef Aquarium was marked by a spectacular Show with a difference. John Dawes reports on this unique event.

As the Singapore/Heathrow British Airways Jumbo climbed into the night sky, I closed my eyes... and realised for the first time that I had a thumping headache!

Gradually, very gradually, it started to make sense. It had been a particularly stressful, but immensely enjoyable and memorable evening which I wouldn't have missed for the world. Now, the pressure was off... and the headache was on... and how!

Three weeks earlier, I couldn't have had the vaguest possible notion that I would soon be judging and lecturing at an ornamental fish show half a world away from my home base in Wiltshire. It is to the eternal credit of the two main organisations concerned, namely, the Singapore Aquarium Fish Exporters' Association (S.A.F.E.A.) and British Airways, that so much had become possible in such a short time.

But, first things first. About two months prior to the invitation, I had been asked to submit an article for publication in the commemorative magazine that was being prepared to coincide with the staging of an "International Ornamental Fish Exposition". The exposition was being planned as part of the celebrations that were to accompany the reopening of the Van Kleeef Aquarium (Singapore's equivalent to our own, London Zoo Aquarium), after a period of refurbishment lasting about two years and costing around one million Singapore dollars (\$51m).

I duly wrote my article and submitted it, along with a selection of suitable illustrations, and that was that... or so I thought. After receiving a note acknowledging receipt of my script, things, as expected, went quiet.

Then, out of the blue, came a call from S.A.F.E.A. inviting me to fly out to Singapore to judge and lecture at the Exposition. Coolly, calmly and collectedly, I considered the proposal in great depth... and examined the numerous ramifications, for all of half-a-second(!)... and started packing.

I had visited Singapore the previous year (see *The Singapore Experience - A & P Oct. '86*) and had been most impressed by what I had seen. This second opportunity was, of course, too good to miss. The only factor we had working against us was time, or rather, lack of it. Three weeks is next to nothing at a time of year when flight



Above, how about this for a "giant" Oranda? (despite the distracting reflections — I had damaged my lens rim and couldn't fit on a polarising filter). Fish such as this one retail at around £300. Right, and how about this for a striking carp, the winner of the Rare Breeds category?



bookings are at their highest to and from Singapore... and we were right in the middle of just such a peak period.

By the time I arrived in Singapore (all flight and hotel bookings successfully negotiated), several days before the show was open to the public, things were already at a very advanced stage, with colourful canopies in place and hundreds of tanks with maturing water awaiting the arrival of the plants and fish. The trade stands were also nearing completion and lorry-loads of decorative potted tropical plants were being tastefully arranged in the spacious and luxuriant grounds surrounding the Van Kleeef Aquarium.

For its part, the Aquarium itself was looking its best. The 71 tanks housing some 500 species (including a magnificent Golden

Arowana collection), were spotless and the water, sparkling. This is not surprising when you consider the Aquarium's superb water treatment systems and water management routine. Basically, the marine tanks are serviced by a massive sand and biological filtration system holding six million litres (6,000 tonnes) of seawater, 50% of which is replaced every 14 days. The freshwater system is half this size, holding a mere(!) 3 million litres.

As the Officer-in-Charge of the Aquarium, Ling Kai Huat, was quick to point out, the water management system is so good that disease problems are virtually unheard of. Even so, extra precautions are always taken over new stock, with everything being subjected to a period of quarantine.

As the exhibits for the Exposition began

arriving, I soon realised that I was in for a real treat — a show of the sort I really enjoy, where most of the exhibits are housed in large, fully furnished aquaria. I was not to be disappointed. There were about 400 tanks in total, ranging in content from fully furnished marine invertebrate systems to complete freshwater community and species tanks, with virtually all other possible permutations in between.

Two categories were, however, exhibited in bare 2-foot and 3-foot tanks: the Fancy Goldfish entries were displayed in fully aerated, filtered and individually illuminated 2-foot tanks with a black background, while the Rare Breeds were shown off in 3-foot aquaria.

The Fancy Goldfish section was a spectacular display of the very best that Singapore can offer. And the very best consists of 12-inch Orandas, 10-inch Ryukins, 8-inch Ranchus, and other equally impressive fish. One day some adventurous importer will (hopefully) bring over some of these giants into the UK. They are pricey, of course — for instance, a 12-inch Oranda retails for about \$81,000 (approx. £300) in Singapore. But, let's face it, good Koi don't come cheap either, and there's plenty of those about in Britain. Time will tell...

My judging responsibilities lay with Aquarium Designs (local and imported) and Rare Breeds.

The designs ranged from traditional Oriental aquaria, e.g. Pagodas, to really avant-garde shapes, some of which were great on the eye but difficult in terms of maintenance. Again, as with the Fancy Goldfish, it would be nice to see some of these aquaria being made available to UK hobbyists.

The Rare Breeds section proved incredibly difficult to judge. The fact that the temperature was a sizzling 35°C (95°F) and the humidity so "thick" you could almost touch it, could have had something to do with it, but ambiguous judging criteria and mixed collections also contributed significantly. In the end, none of this made any difference since the clear winner left everything else standing, as it were. We gave the top award to two fish (of the same species) that had never before been seen in Singapore. In fact, even a thorough search through the references in the Van Kleef Aquarium failed to reveal the identity of these large, characterful, carp (we could, at least, get that far in our identification). The specimens were both males in full breeding condition, as evidenced by the extensive development of nuptial tubercles. They had originated in Lao, in China, and steps were going to be taken after the show to seek out some females. If this proves successful, we could well end up before too long with a most distinguished-looking addition to the long list of exports available from Singapore.

The day after the judging came the official opening to the public. After the welcoming speeches from the Minister of State for National Development and Home Affairs, Dr Lee Boon Yang, and the Chairman of S.A.F.E.A., Mr Tan Bok Yang, the crowds came pouring in.

My duties were not yet over, though. My



Judging "traditional" and avant-garde aquaria among the flowers — and in a temperature of 35°C (95°F).

flight was due to leave Singapore at 10 o'clock that same night. However, there was still the little matter of an open-air public lecture to be tackled... and this couldn't start until nightfall which, in Singapore, is around 7.30.

The wait seemed interminable. I had never given an open-air lecture before... I had never lectured in Singapore before... I was lecturing to the general public, not to fishkeepers... would they, therefore, know what I was rambling on about?... would they turn up?... would the projector work?... would I freeze, despite the tropical temperatures?... These, and a host of other questions, kept racing through my mind. Anyway, the moment arrived, the sky turned black, the announcement was made, the adrenalin poured off me, the projector flicked on... and the second slide jammed! Quick as a flash, Ling Kai Huat was there, struggling valiantly with the stubborn, totally unreasonable and totally unyielding projector. A replacement was quickly brought out, the slides transferred to a new magazine... and, thankfully, we were off again. Through it all, the audience, which had swelled so that I could no longer see the back row in the subdued light, commendably sat and waited patiently for the show to restart.

Luckily, everything went like a dream from that point onwards, undeniably helped by the appreciative whispers I could hear from time to time (you develop a hypersensitive ear capable of picking up the most delicate vibes from an audience when you are lecturing) as we went through the slides. The enthusiastic response at the end was beyond anything I could have expected.

Then, it was a question of a lightning-fast handshake and presentation of a commemorative plate from the S.A.F.E.A. Chairman, followed by a dash to the airport and on to the plane... and the headache!

In many ways, the Exposition was a remarkable event, not least for the fact that it represented a highly successful co-operative effort between the Singapore Government, on the one hand, and S.A.F.E.A., the Singapore Aquarium Fish Breeders' Association and the Singapore Aquarists' Society on the other. This joint venture was seen by both sides as evidence that the Government and private sectors can work constructively together. So much so, that there's even talk already of a similar, but bigger and more international show, perhaps in two years' time. Now, there's a mouthwatering prospect...

Acknowledgements

A great deal of toing and froing was necessary to arrange my visit to Singapore for the Exposition at very short notice.

My most sincere thanks go to Mr Ong Chin Boo, District Sales Manager for British Airways, who broke new ground by granting me the honour of being the first person to be "sponsored" by BA in connection with the ornamental fish industry (BA is now the largest carrier of ornamental fish between Singapore and the UK).

Mr Ling Kai Huat, the Officer in Charge at the Van Kleef Aquarium, was generous, both in time, and in the provision of lecturing facilities. His help, particularly during the day of my lecture, contributed in large measure to our joint success.

Finally, of course, I would like to record my thanks to S.A.F.E.A. whose hospitality (as anyone fortunate enough to have experienced it will know) is nothing short of magnificent.

Treasures of the Tropic Seas (Revisited)

In May of this year, we ran a highly successful competition in which we gave away a copy of René Catalás fabulous and colourful book **Treasures of the Tropic Seas**.

We were so inundated with entries that we are running a second **Treasures** competition. The difference this time is that the publishers, **Facts on File Ltd.**, are giving away **FIVE** copies of this superb £30 book. So, if you missed out first time round, here's your second chance!

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1. Is the Coral Trout a trout, cod, or grouper?
2. What's the correct specific gravity for a tropical marine aquarium: 1.001, 1.020, or 1.560?
3. What's a Spanish Dancer — a Flamenco specialist(!), a flashlight fish, or a sea slug?

Answers, please, on a postcard to arrive, along with your name and address in **BLOCK CAPITALS**, no later than **31 December**. Send your entry to **Aquarist & Pondkeeper, (Treasures Competition), 58 Fleet Street, London, EC4Y 1JU.**



Letters

Coldwater Comments

I read in the coldwater queries column (Your Questions Answered — August '87) of a reader's letter requesting advice on the setting up of coldwater aquaria with real plants.

The answers given left me a little more than sceptical. I agree with the use of a 36in x 15in x 12in tank, but I would not necessarily consider it the smallest aquarium one should use; it depends, of course, on the size of the prospective inmates for a start.

At the other extreme, the use of goldfish varieties in a furnished tank poses a multitude of problems. Pauline Hodgkinson seems to place particular emphasis on Fancy Goldfish and suggests a variety of plants, all of which are unsuited to withstand their destructive nature. All goldfish are liable to strip *Egeria*, *Elodea* and *Lagarosiphon* to the bare stalks; as for *Vallisneria*, unless it has been well established at least six weeks before their introduction it will not be allowed to propagate.

Quite a number of goldfish specialists feel that plants are more of a hindrance than a help and, in consequence, house their charges in all-clear tanks well equipped with efficient filtration systems. In all my experience there is no such thing as a permanent, well-furnished aquarium complete with Fancy Goldfish. They are "grubbers" that will tear their plants apart in the course of feeding.

Your expert failed to mention the other species of coldwater fishes available, though I must confess that some of them are not always obtainable when one wants them. I refer, of course, to such fishes as the Japanese Rose Bitterling, European Bitterling, Red Shiner, Fathead Minnow, Golden Rudd, Black-banded and Pygmy Sunfishes, to mention a few. Further, the White Cloud Mountain Minnow and the Golden Medaka can be housed quite comfortably in a well-furnished two-foot tank indoors — even Rosy Barbs which will tolerate temperature drops down to the mid-forties Fahrenheit (though I must emphasise that the latter

three species must be introduced to the unheated aquarium during the summer months in order to acclimatise them).

Filtration is not essential, I find, in well-furnished aquaria housing small fishes. I have a 24in x 12in x 12in tank with a well-established plantation of *Sagittaria nifoliosa* housing eight killifishes, namely *Aphanius monti*. It was set up fifteen years ago; it has supported many other species in the past, and has never been cleaned out. Apart from the occasional syphoning of unwanted sediment and thinning out of excess plants, it has required little maintenance.

The tank is situated near a bay window facing west, the water is crystal clear at all times and I scrape the front glass of algae twice a year. There has never been any disease present and above all else no form of filtration has ever been used. In all fairness the fishes have always been small species. Incidentally, the tank is totally dependent on the sun for its light. I must emphasise, in agreement with your column, that it is dangerous to overcrowd, even with smaller species.

Your column mentions Fantails, Redcaps, Lionheads and Pearlscales. I would not, with the possible exception of the Fantails, consider these beginners' fishes. A mention was made about a book entitled "A Fishkeepers Guide to Coldwater Fishes" by Dick Mills. This is an excellent addition to the fishkeeper's library, particularly for coldwater beginners, because it gives a more comprehensive idea and a good insight into the availability of coldwater species in this country, more so than any other book I can recall reading.

V. B. Hunt
Widley, Hants.

Pauline Hodgkinson replies

Dear Mr Hunt,

Thank you for your letter; I am always pleased to receive our readers' views and I appreciate you taking the time to write.

On the subject of plants, the ones which were suggested can all be termed as hardy, are all easily available and are all suitable subjects to be grown at cool temperatures. It is true that plants are often damaged or destroyed by fish, in particular by members of the Carp family. Some individuals are particularly partial to some tasty vegetation, while others have only a passing interest. However, as yet, these species of plants are not too exorbitant in price and can be replaced and, surely, if the fish we keep in captivity give us pleasure, we in turn should indulge them a little. Of course, there are many other species of plants which are able to flourish in a coldwater environment and an excellent book on the subject is **Coldwater Aquarium Plants** by Vivian de Thabrew, published by Thornhill Press.

You are quite correct when you say that many goldfish specialists house their charges in tanks free from gravel and plants, preferring uncluttered, filtered or unfiltered aquariums. The reason is that their interests lie in the fish themselves, rather than in creating a pretty display. In addition, one cannot overlook the very important fact that they may have so many fish and aquaria that to maintain their set-up with the least possible time, fuss and hindrance, bare tanks are really a necessity. I, myself, have twenty six large tanks running at this present time, so I must spend a good few hours each week keeping everything going in tip-top condition. Like me, many of the specialists house their set-ups in what we term "fish-houses" and, therefore, water-scaping our aquariums is not necessary. However, I for one, would not find a bare tank in my own living room a picture of beauty, rather something of an eyesore, regardless of how magnificent the occupants might be.

Of course, filtration is not essential, a fact which you yourself have proven, but generally speaking, beginners to fish-keeping do find that some form of filtration assists them greatly with maintaining the quality and clarity of the water essential for the good health and well-being of the fish and, of course,

the enjoyment of the hobbyist. Once the basic skills are learned, then the fishkeeper can decide if the tanks should be run with filters, or without.

You do not explain why you do not consider my choice of fish suitable for the beginner. As I see it, any variety or species is at risk in the hands of a novice, a fact which each one of us can testify to.

I, personally, would never recommend that anyone should begin with any of the goldfish varieties with broad, flowing finnage, such as the Veiltail. These fish are very susceptible to fin congestion which causes stress and possible bacterial infections, such as fungus and fin-rot. The varieties which I suggested were based upon my own experience of these types because, over the years, I have kept and bred most varieties of Fancy Goldfish and have specialised in Fantails and Lionheads for a number of years. In my particular experience, I have found that my Lionheads are as hardy, if not harder, than the Fantails. I can see only one possible drawback in the less experienced fishkeeper acquiring Lionheads — the fact that, as they develop, they do from time to time secrete a white mucus from the head (which is all part of the development of the hood). In fact, this is also a trait with the Oranda, another hooded variety. In the hands of the less experienced, this process can be mistaken for a disease and unnecessary suffering can be caused to the fish by the attempted treatment of this condition.

The Fantail Redcap, always available from aquatic dealers, is an extremely hardy fish and, although the specialists prefer the Broad-tail Redcap, few are ever offered for sale due to the lack of interest from the amateur breeders. Further, the fact that it is difficult to produce good broad, 'square cut' finnage, plus a red cap on a white or silver fish, limits their numbers for the commercial breeders.

The slim-bodied types are, of course, harder than the twin-tail. Common Goldfish and the increasingly popular London Shubunkin (the latter now fast becoming a particular favourite with the specialists

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Letters

and, without doubt, one of the most magnificently coloured nacreous fish now bred by the hobbyist) are ideal subjects to begin the hobby and join the goldfish appreciation band. However, most fishkeepers are looking for variety and will soon wish to collect and keep other types such as the twin-tails.

All the species of coldwater fish which you mentioned are delightful and interesting fish,

but, as you rightly say, are not so easily obtainable. This is, of course, a great pity, and therefore caution must be taken about recommending difficult-to-obtain species. In fact, I do get many requests from readers for addresses where they can purchase many of the fish which you mentioned.

Thank you for your interest and time given to express your opinion on these matters.

Pauline Hodgkinson

TEAR-YOUR-HAIR-OUT CROSSWORD

It's tear-your-hair-out time folks. Have a go at this crossword; then if you're still sane, turn to page 35 and check your answers. Have fun!



CLUES

Across

1. Upwardly mobile, this popular fish has several tail forms (5).
3. African/Arabian sea (3).
4. Japanese bird may crown this Oranda (5).
7. Coarse Cyprinid (5).
10. Frogs and toads fall under this heading (5).
11. Six-legged invertebrate (6).
12. Flounder (3).
13. Amazonian Characin (5).

Down

1. Kissing fish (7).
2. May also be found in a cage! (5).
3. Salmon, though often found in garden adjacent to pond (4).
5. Backward male (2).
6. Blood Characin with a bite (7).
8. Dis-unite (5).
9. Unexpected marine visitor? (1,3).
10. Current, not to be taken lightly (1,1).



Left, a fully furnished aquarium suitable for Chocolate Gouramis. Right, Chocolate Gouramis require "mature" conditions, but not necessarily a species tank, to remain in peak condition (as this specimen evidently is) for any length of time.

THE 'MYTHICAL' CHOCOLATE GOURAMI

Gina Sandford of the Anabantoid Association of Great Britain has kept and spawned this interesting and 'difficult' mouthbrooder . . . in a community tank. For further details, read on . . .

Of all the small anabantoids, the one surrounded by the most myths must be the Chocolate Gourami, *Sphaerichthys ophromenoides* Canestrini, 1860. In many aquarium books it is described as 'difficult' and so has been avoided by both aquarists and shopkeepers, hence it is seldom available.

S. ophromenoides is found in the Malay Peninsula and Sumatra where it inhabits small streams and pools.

It is a small fish (about 6cm [c.2.4in] in length when adult), and this may prove to be one of the main reasons why it has gained a reputation for being difficult. It is often small, young fish that are offered for sale, and the initial acclimatisation period in the home aquarium is critical. Choose fish that are swimming about and looking alert, and buy a small shoal of about 8-12 specimens (they look better in a group, anyway).

The aquarium

From experience, the aquarium used to house *S. ophromenoides* needs to be a well-established, mature tank, but not necessarily a species-specific tank. Water quality is important and the conditions needed can only be achieved in a tank which has been in operation for nine months to a year.

In my own fish room, the tank used was 48in x 18in x 18in. It had been fully operational for about three years and was what



A rare sight indeed - a Chocolate Gourami fry.

most people would call a community tank. The substrate was a 2in layer of filtration sand, a non-compacting, inert medium which allows good plant growth. Two large pieces of bogwood were added for decorative purposes and for the attachment of plants such as *Microsorium pteropus* (Java Fern). The remainder of the tank was planted with, among others, *Rotala indica*, *Rotala macrantha*, *Ludwigia arcuata*, *Hygrophila polysperma*, *Micranthemum micranthemoides*, a single specimen plant of *Echinodorus muriei*, and various *Cryptocoryne* species. These plants were arranged so that an open area of substrate was available at the front of the tank to allow fish to feed.

To get the plants to flourish, four 4-foot fluorescent tubes were used and they were

on for 12 hours a day. The tank was filtered with an Eheim external power filter of sufficient size to theoretically turn over the water twice an hour. This type of filtration, and the water flow created, is not only beneficial to the plants but also to the fishes. The water temperature was approximately 72-74°F (22-23°C), the pH varied between 6.0 and 6.5 and the dH was around 5 degrees General Hardness.

Introduction & aquarium care

At the time the Chocolate Gouramis were introduced into the tank there were about thirty other fish in residence including a small shoal of Congo Tetras, *Phenacogrammus interruptus*, and various species of small catfish. You will, of course, note that I did not quarantine the fish. On previous occasions when I have been dealing with more delicate species I have found that, by quarantining in clinical tanks, I have had more losses and problems than I care to think about. However, by using an established, mature tank where the inmates are not chased about and taken to shows and, more importantly, are not kept in overstocked conditions, then I have no problems at all.

Ten specimens were put into the tank; they varied in size from about 10mm to 25mm (0.4-1.0in) and were light brown in colour. Copious supplies of live food were given in the form of *Daphnia* and *Cyclops*, and this was supplemented with frozen

bloodworm and plankton and a good quality flake food. Whatever food was offered, it was necessary to ensure that it was small enough for the fish to eat.

The fish grew steadily and within six months were showing their adult colours — dark brown with vertical cream bars; the dorsal and anal fins had a gold edge. At this time there was no apparent difference between the sexes. There was, however, a behaviour pattern developing within the shoal, with a pecking order being established which was most apparent when the fish were feeding. During the day they could be seen swimming around the tank, usually on a set route. At night they rested below leaves at the surface of the tank and exhibited a nocturnal colour pattern which was a mottled, cloudy beige/brown colour.

Spawning success

After about 18 months one fish was seen with a distended throat, it was also refusing to eat. When removed to another tank for closer examination approximately 40 amber eggs were spat out. Obviously, there was nothing wrong with this female and she was returned to the main tank.

Over the next few weeks courtship displays were observed on several occasions. The pair would select a quiet area and circle each other just above the substrate. The colours displayed at this time were very intense, a deep chocolate brown with clear cream bars on the body, the fins became dark navy blue with the gold edges glistening

as the fish moved around each other. It was only now that the fish were fully mature that the sexes could be distinguished. Females were more robust than males with more rounded dorsal and anal fins. However, when they were out of breeding condition it was still difficult to tell male from female as the differences are so slight.

The act of laying was never witnessed — the fish were much too secretive. The female would appear below some leaves towards the surface and remain quietly out of harm's way, refusing to eat for about 10-16 days. The fry, when hatched, were small (about 5mm — 0.2in) and their chances of survival with the Congo Tetras in the tank were remote, so remote that I never succeeded to raise any of them.

Two breeding pairs of fish had emerged from the original shoal — whether the remaining members of the shoal were the same sex or whether they were just sub-dominant was indeterminate. I decided to move one pair to a separate furnished tank on the principle that, if they had spawned once, they would do it again; but no. When returned to the main tank I once again had my two active spawning pairs. The only answer was to move everything else out of the main tank but, unfortunately, available tank space did not permit this course of action.

Cold-shower treatment

Despite the disappointment of not being able to raise the fry, several interesting

observations were made. Spawning could be triggered by a water change. About a third of the water was removed when regular maintenance was carried out and the tank was topped up with cold water sprayed in slowly from the hose pipe so that it took about 2 hours for the tank to fill. This act caused the Congo Tetras to spawn in the cool water from the hose pipe and about 24 hours later the Chocolate Gouramis could be seen circling each other. Whether this was a result of the water change or the hormones released into the water by the spawning Congo Tetras could not be determined.

Feeding was crucial to the initial acclimatisation of the fish, while live foods of a suitable size are necessary to maintain them in spawning condition.

Water temperature is not critical, however, I have found that 72-74°F (22-23°C) is conducive to spawning and longevity — these fish lived for 8-9 years. Water maturity however, is important.

All in all, I find the Chocolate Gourami to be one of the most satisfying fish for the home aquarium. For anyone willing to take the time to prepare the aquarium, supply the right foods and, above all, have a little patience, *S. asotomensis* will provide them in return with many years of pleasure.

Note: For details of the Anabantoid Association of Great Britain, write (enclosing S.A.E.) to: Ron Wright (Secretary), 143 Military Road, Colchester, Essex.

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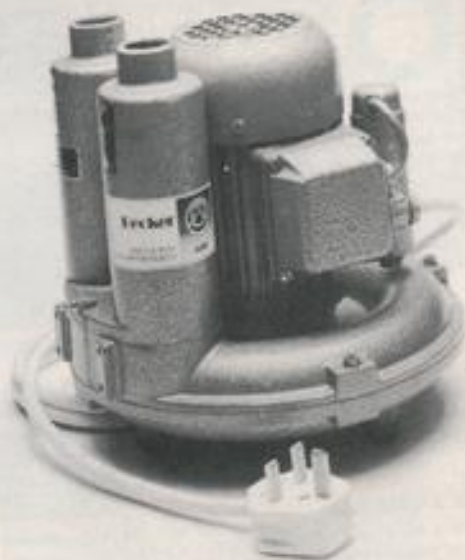
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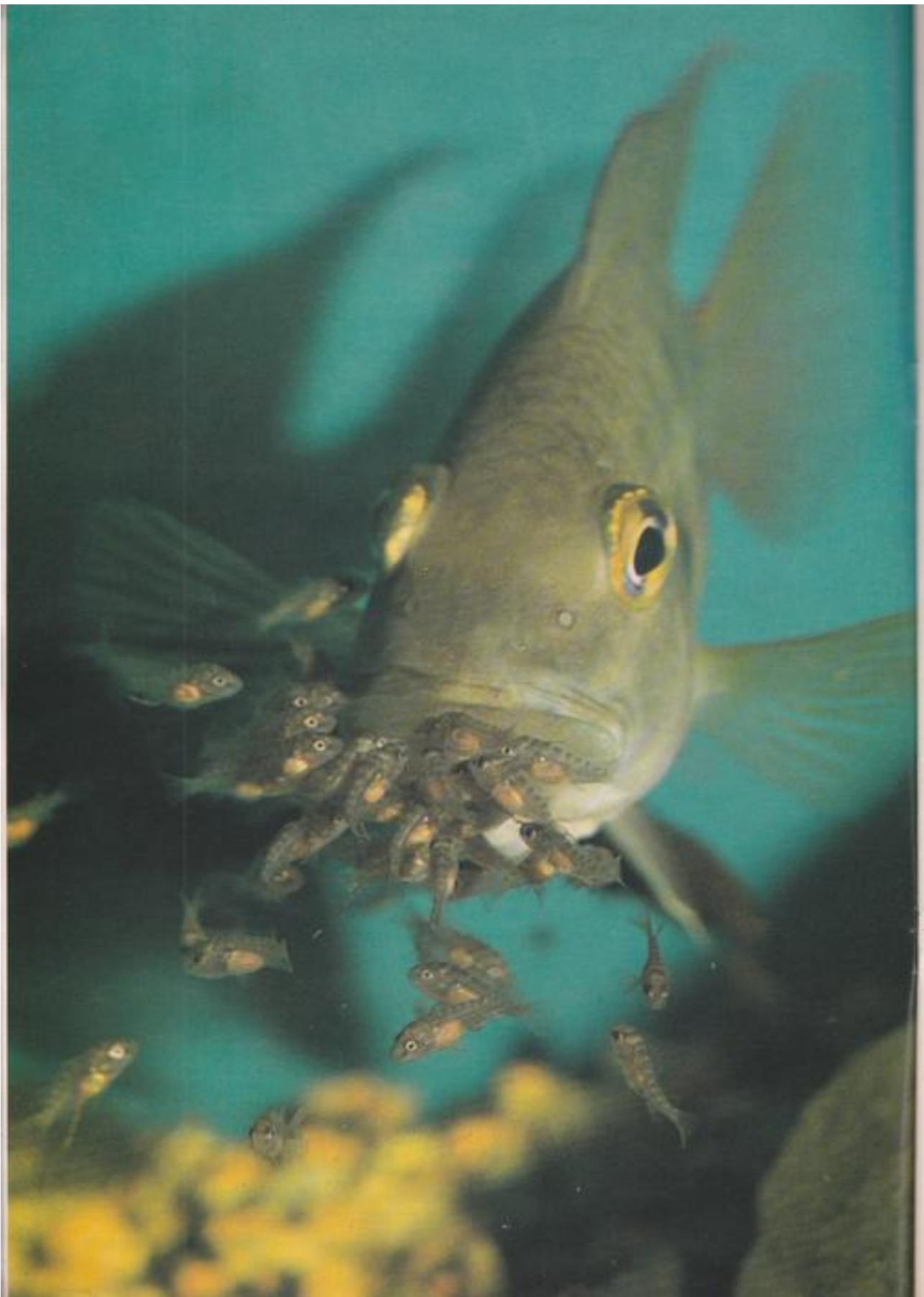
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Spotlight

GUNTHER'S MOUTHBROODER

(*Chromidotilapia guntheri guntheri*) (Sauvage, 1882)

Gunther's Mouthbrooder is not one of the most regularly available African cichlids. If you see it, grab it, and you will have obtained a very interesting and rewarding species, as David Sands explains.

Photograph by David Sands

This West African modest-sized cichlid appears in aquarium shops from time to time and can, unfortunately, be ignored when juvenile, at the two-inch mark, in its plain yellow-brown livery. A hint or a flash of fluorescence in the dorsal fin might just give a clue to the splendid beauty of this species once it decides to dress up in spawning colours. As adults they grow between 120-150mm (c 5-6in) — males are slightly larger — and it is then that the male takes on his red tinges and the breeding female flashes her metallic lilac dorsal fin and thundering red anal.

Chromidotilapia guntheri guntheri is collected wild from along the West African coastline rivers, from the Cavally down to the Nyong, but it is also available through the Singapore/Hong Kong fishfarms.

There is a sub-species mentioned in Horst Linke's and Wolfgang Staack's wonderful book *Dwarf African Cichlids of West Africa* published in German by Tetra, *Chromidotilapia guntheri loenbergeri* (Trewavas, 1962) which appears to have a restricted distribution about the Sangama river in West Cameroon (Ngan-joke river). I'm not sure if this form has been seen in England or, indeed, how its size and 'silver-bronze' pattern is distinctive from the form we know.

The Gunther's Cichlids' natural habitat would be soft and acidic waters, and a natural pair would probably choose a nice pebble on the quieter riverbank side on which to perform their genetic parental priority.

They are happy in most aquaria, although they are best spawned in a modest 600mm x 450mm x 300mm (24in x 18in x 12in) sized

breeding tank. They prefer warm water, between 80-85°F (26.6-29.5°C) and a neutral pH, say between 6.7 and 7.2. The hardness should be as low as it is possible to have it. Those fishkeepers in Scotland, Yorkshire and certain parts of lovely Lancashire will have no trouble with soft water. It is those "poor" people in London (and those in Southport who receive limestone borehole water) with a pH of 8.1 and a hardness of 'Heaven knows how high', who have my sympathy. They will just have to store rainwater which should be aerated and mixed with some fresh tapwater before use.

When a pair of Gunther's Cichlids settle down and decide not to murder each other right away (they are as aggressive as any non-Rift Lake Cichlid) a suitable spawning site on the substrate is chosen. This can be a piece of slate or bogwood or, as in the case of my fish, on a flat lump of sandstone.

The female puts on her best Robin Redbreast and proceeds to place up to 100 eggs onto the surface and then the male skates over them with the all-important fertilisation stuff. In Loiselle's book, *The Cichlid Aquarium*, (Tetra) there is a confusing picture on page 159 which shows the female placing eggs but, unfortunately, the caption suggests that this illustrates the male performing extrabuccal (outside of the mouth for you and me) fertilisation . . . or *perthilisation* if I take the caption to its ultimate. I know how gremlins get into books . . . my own *Catfishes of The World* volumes, produced without the help of a major publisher, are riddled with nasties . . .

Back to the breeding, both parents pick up the eggs and retain them in the mouth and, after hatching, the fry are often passed back and forward between them. It is a

truly most amazing sight to observe 50 or 80 midge-sized fry being sucked into the fishes' mouth . . . only to be spat out again a moment later!

It is the marvellous 'natural simplicity' of mouthbrooders that catches my eye, and they have such a clever system of looking after their proteges which is surely comparable in sheer ingenuity with any other in the animal kingdom. Nature's efficiency is for the parents to reproduce themselves and the mouthbrooding fishes must do very well.

As the offspring develop over the next month or so they remain fairly close to their parents, dashing back to the safety of a parent's mouth at the first sign of trouble. But, as each day passes, the babies search further, pecking at the substrate like chicks fresh from the hatchery. At a certain point, the adults seem to lose interest in them (perhaps because the breeding cycle is about to begin again and the previous job is considered over and done) and juveniles are allowed to stray way beyond the previously well-marked-out, 'close boundaries' around the spawning site. At this stage the fry are vulnerable to passing predators in aquaria. I always netted a few fry away to be raised separately, but never all because this seemed to create havoc with the instinct of parent fishes. With the fry gone prematurely and no one to blame, schizophrenia appears to set in fast with bad temperament and 'fights to the death' resulting!

As with all **Spotlight** articles, I can heartily recommend the subject of this, Gunther's Mouthbrooder, to any fishkeeper who wishes to witness one of nature's little gems in reproductive action in a most spectacular way.

THOUGHTS OF 1987 HOPES FOR 1988

We invited three famous Davids to summarise their personal thoughts on the past twelve months and cast their eye forward to the future. Three very different pictures emerged, each fascinating in its own unique way.



DR DAVID FORD
(‘Aquarian’ Advisory Service)

When the editor asked me for my most memorable happening in fishkeeping '87, several things sprung to mind... visiting the Living Seas at Disney World's EPCOT Centre... building a triple pond system in

my garden... setting up my first paludarium as an Amazonian rain forest... lecturing to no less than 12 aquarium societies... and so on.

I then realised that these were all very personal happenings. What, I wondered was the notable fishkeeping event of '87, that was relevant to all aquarists? I believe the answer is — all of them. What has happened in '87 is that all the traditional events, and many products, have moved “up market”. The hobby has therefore become more sophisticated, and all the better for it.

The AFE '87 (‘Aquarian Fishkeeping Exhibition’) at Sandown Park last June included a professionally built learning Maze, rather than the DIY models of earlier years. The Yorkshire Aquarist Festival moved to Leeds City Centre and advertised the show to the general public rather than just the hobbyist, as in previous years. The British Aquarist Festival moved from the increasingly dilapidated Belle Vue site to the prestigious G-Mex Centre in the heart of Manchester. Even Channel 4 T.V. carried advertising for this show.

The aquarium products too have become more sophisticated, from tanks encased in antique furniture, to complex filter systems that even reduce nitrates.

Many exciting new species of fish have been offered to the hobbyist in '87. Some of these are North American fishes, such as the Darters and Madtoms, some are African

and others, the rarer Amazonian species.

Examples are *Corydoras panda*, *garbei*, *haraldschultzei*, *macropterus*, *Brochis britskii* and *Synodontis granulosa*.

Hopes for '88? That this trend continues! I realise that sophistication equals expense. Better venues for shows bring higher costs and potentially higher entrance fees, while better equipment may mean higher prices. But this is not necessarily inevitable, if the numbers of people attending shows rises, and if the quantity of equipment sold is greater. To achieve this we all need to expand the hobby, to spread the word, and this is certainly my goal for '88.

Good fishkeeping!

David Ford



DR DAVID POOL,
(Tetra Information Centre)

1987 appears to have been the year of the pondkeeper. The numbers of people having ponds has increased greatly over the last 12 months, and this is despite having a typical British summer. The greater importance placed on leisure interests may, in part, be responsible, as may the presence of aquatic franchises in many Garden Centres. Certainly, the low cost and ready availability of pre-formed ponds and liners has brought pond construction within the scope of most gardeners. Whatever the cause, the numbers of pondkeepers will be swelled still further if we have a good summer in 1988. Those of us with existing ponds will also benefit, so roll on 1988.

Most people who keep ponds in the UK stock them with fish, unlike the Germans, for example, many of whom keep a pond just for the plants or natural wildlife. As a result of this, Britain is one of the largest markets for coldwater ornamental fish. At the present time most of these fish (some 7-8 million pounds' worth) are imported from countries such as Japan, Israel and Italy.

However, during 1987 there was a considerable increase in the production of British bred ornamental fish, with new farms

reported to be opening almost every week. The result is that Goldfish, Koi and Orfe are now being bred in this country in considerable numbers. Hopefully, this trend will continue during 1988. Fish that are bred and raised in this country will be better able to withstand the British climate and will not be subject to any long stressful journeys. Consequently, they should be in better condition when we buy them, and be more likely to survive when introduced into a pond.

The increase in aquaculture has had many benefits for the fishkeeper, including the extensive research into disease remedies, filtration and nutrition. In recent years the idea of vaccinating fish against disease has been the subject of considerable research. Most of this work has centred around the trout and salmon industry and, during 1987, the use of vaccines against bacterial diseases has increased in popularity. These vaccines are administered by injection or by a short term bath and, in trials, greatly reduced the susceptibility of farmed fish to that particular disease. With the increasing importance of carp and ornamental fish culture, hopefully, vaccines will also be developed against the diseases of these fish. Already trials using salmon vaccines have proved successful in reducing the incidence of ulceration in Goldfish. If successful, such vaccines would be of great interest for people keeping Koi and Goldfish.

Getting away from coldwater fish, 1987 has seen a dramatic reduction in the use of cyanide to capture marine reef fish, thanks partly to pressure from aquarists. The stress and toxic effects of this form of capture resulted in many fish dying soon after importation. Let us hope that the reduction continues during 1988.

Well-planted tropical freshwater aquaria can look very spectacular and are very popular. Unfortunately, getting the plants to grow is not always as easy as it might be. However, in the last year a number of products have become available aimed at improving your chances of success. These include books, planting media, root and water fertilisers and methods of introducing carbon dioxide into the water. With all of these aids, there should now be no excuse for a poorly planted aquarium.

1987 was the year of change as far as two of the biggest aquarist shows were concerned. The Yorkshire Aquarist Festival moved home from Doncaster Race Course to the Queens Hall in Leeds, and the British Aquarist Festival moved from Belle Vue to the plush surroundings of the GMex Centre in Manchester. Only time will tell if these moves are successful, but, hopefully, the easier access to both venues will result in more aquarists, both new and experienced, attending the shows.

On the subject of shows, 1988 is the 50th anniversary of the F.B.A.S. and, to celebrate this fact, they are planning to hold a large show under the banner of 'Fish World' at the Alexandra Palace in London. This new show, together with other planned events, should make 1988 a special year for the fishkeeper.

David Pool



DAVID SANDS (Dee Bee Books)

There have been several fishkeeping highlights and hopes for me in 1987. At the Aquarian Sandown show a familiar face said "Hello" at the Dee Bee Books stand and asked if I remembered him. He had attended the same Ichthyology course at the British Museum, of which I was the secretary. He was not only very kind about my progress and said he read my articles, but he even subscribed to the full set of my series, *Catfishes Of The World*... and that was not a small expenditure! He reminded me of the course I attended in London... and I remembered the hours I spent looking at preserved specimens, old ichthyological works, and talking to people in the fish section, asking simple questions that always seemed to have complicated answers.

This was the second time a member of that historical first ichthyology course had raised happy memories. A certain Chief Superintendent at Scotland Yard who shares my love of *'The Hobby'* offered to help me in my research on a novel (... not about fish... a psychological thriller!) which follows hard on my children's conservation novel which had been on my writing desk for over two years! Anyway, this 'Chief Super' asked me to lecture at his fish club in return for the favour, and I had a very enjoyable time.

I sincerely hope I will always retain my fishkeeping friends... through thick and thin.

At the Yorkshire show, just as all the stands and displays were being dismantled, I was deep in conversation with the editor of this magazine. Inching towards me from behind was a huge box van/truck and I was oblivious to its deadly progress. John could have let me be crushed beneath its wheels (*Now, would I do that to you, David? — Ed's Note*), but he thought better and pulled me away. Did John Dawes really save the life of the best known catfish writer in the World???

On the fishkeeping front I have seen the confirmation of a definite trend in recent years towards the sale of coldwater fishes, away from traditional aquarists' shops and into specialist dealers and garden centres.

Sometimes Koi are being elevated beyond the average gardener, sometimes they are being sold from under a weather-proof building and expected to survive our harsh weather. Not every pondkeeper who buys these jewels has a pond with sufficient depth and filtration. Some establishments sell regardless.

Most aquarium/tropical fish retailers will tell you they had a tough year, and some businesses did go to the wall.

There have been more fishkeeping books published in this year than in any other I can remember. Not all have been good, but some have broken the mould and looked into old subjects with a fresh eye.

I attended the Northern Area Catfish group convention at Martin Mere Wildfowl Trust near Southport and was heartened to see this healthy group (that I had the pleasure to form in 1979/1980) attract several great speakers and show fishkeeping off to the public. An imitation natural aquascape for *Corydoras panda* was one highlight.

At the same group's Open Show one month later, I handed out a trophy to a gentleman who had succeeded to breed and raise *Corydoras panda*, and his achievement could be seen by everyone. Also, an old customer of my shop, whose passion is for *Botia* and odd barbs, said "Hello" after several years and then proceeded to ask me if I had ever found a name for a barb I once brought back from Belgium/Germany and sold to him. He still had one alive... I only have a picture... but I couldn't give him a name because I still don't know!

This year saw me out of my aquatic shop for the first time in eight years and back into an office (I returned to my old trade... accounting). I have just got used to being without some of my customers who became almost like friends. Don't get me wrong, some were downright bad, like the man who bought a power filter from another (coldwater) business and came to me for advice on setting it up! He proudly announced the price he paid, which was less than I could buy it at... I hope most customers respect their favourite shop next year!

The real highlight of this year was setting up my own aquarium after not owning one for a year! Belton Fish Farm provided me with half a dozen wild 'Scalare' Angelfish and gave the same number of true *Corydoras julii* for me to take some pictures of. These were the first hobbyist fish I had bought/owned for years, and I was as happy as I had been in my first years in the hobby... twenty years ago. Buying live plants and selecting rocks and bogwood for this aquarium reminded me of how wonderful fishkeeping is. I hated the wiring of the electrics (one day this will be much easier) but once the aquarium was filled and settled and ready for my angelfish... I was a boy again.

For 1988... I hope everyone who comes into the hobby finds a friend who can guide them through the tricky beginnings, and I hope those who have been in the hobby for years, don't forget why they loved fishkeeping... right back at the start.

David Sands



This year's glittering Y.A.F. prizes.

Y.A.F. SHOW RESULTS PART 2

First in exhibitors' classes

P. Baker, (Castleford),
Breeders ADV Egglayer
Ben Connell, (South Leeds),
Goldfish and Comets
Mr and Mrs Silk, (SJS), Shubunkins
Mr and Mrs Silk, (SJS),
Fancy Goldfish
K. Hunter, (Workington),
ADV Coldwater
Des and Becky Penny, (YAGCAGB),
Breeders Coldwater
A. D. Fisher, (Bradford), Plants
K. F. Taylor, (Hull),
Amphibians and Terrapins
P. Wharton, (North Sheffield),
Pairs Livebearers
K. Fowler, (Workington),
Pairs Egglayers
R. I. Payne, (Merseyside), Gambusia
Mr and Mrs C. Sellers, (Leeds PD),
Xiphophorus and Poecilia
Breeders
D. and P. Lambert, (SLAG),
ADV Livebearers Breeders
G. A. Todd, (Hull),
Anabantoids, Barbs, Characins
Breeders
A. Hough, (YAGCAGB),
Catfish Breeders
Mr and Mrs Whitaker, (Rothwell and
Wakefield), Cichlids Breeders
Mr and Mrs Casey, (York), Sharks
R. I. Payne, (Merseyside), Foxes
G. A. Todd, (Hull),
ADV Small Tropical
Mr and Mrs Roberts,
(Sandgrounders),
ADV Large Tropicals
Des and Becky Penny, (YAGCAGB),
Native Marines
D. and P. Lambert, (SLAG),
Female Livebearer
Mr and Mrs J. Riley, (Leeds PD),
Female Egglayer
D. Barrett, (SLAG), Swordtails
P. and A. Moore, (SLAG),
AV Goodeid
D. and P. Lambert, (SLAG),
ADV Livebearer
M. and P. Jordan, (Bridlington),
Small Barbs

S. and L. King, (DHSS),
Small Characins
J. T. Morris, (Sandgrounders),
Large Characins
R. Suggitt, (Bradford), Rasboras
Paul Woodhouse, (South Leeds),
Tropical Furnished Aquarium
R. and J. (HCAG),
Coldwater Furnished Aquarium
Des and Becky Penny, (YAGCAGB),
Marine Furnished Aquarium
R. and J. (HCAG), Aquascape
Mr and Mrs Whitaker, (Rothwell and
Wakefield), Novelty
W. Aspinall, (Merseyside), Guppies
L. Wharton, (North Sheffield), Platies
P. and A. Moore, (SLAG), Mollies
R. Foster, (North Sheffield),
Endemic Riv. Lake Cichlids
L. Wharton, (North Sheffield),
Small Cichlids
P. and D. Stacey, (Bridlington),
Large Cichlids
K. Fowler, (Workington),
Corydoras, Apistogram, Brochis
C. Mostyn, (Hull), Angels
Des and Becky Penny, (YAGCAGB),
Small Catfish
T. and D. Cruickshank (NASTIES),
Large Catfish
Mr and Mrs Minshull,
(Sandgrounders),
Loaches and Boas
Mr and Mrs J. Riley, (Leeds PD),
Danios
P. Wharton, (North Sheffield),
Minnows
Mr and Mrs Whitaker, (Rothwell and
Wakefield), AV Aphysosemion
P. Baker, (Castleford), ADV Killifish
R. I. Payne, (Merseyside),
Siamese Fighter (True-coloured)
M. Tomkinson, (South Leeds),
Siamese Fighter (Multi-coloured)
M. and P. Jordan, (Bridlington),
Small Anabantoids
Mr and Mrs Baldwin,
(Sandgrounders),
Large Anabantoids

Correct answers to
Tear-Your-Hair-
Out Crossword
(Page 20)



GETTING SET FOR A GOLDEN 1988

In 1988, to many people will be Olympic Games year. However, to a very large number of fishkeepers in Britain, 1988 will be additionally special for it's the Golden Jubilee Anniversary year of the founding of the **FBAS — the Federation of British Aquatic Societies.**

Whereas the first 40 years reflected a steady growth in all areas, the last ten years have seen a total concentration of effort, not only in maintaining and increasing the flow of aquatic information, but also in the extension of this important service to a much greater number of Societies by means of the **FBAS Associate Membership Scheme.** The fact that the number of new publications (including the first colour production — a Booklet on Koi) has doubled since 1978, is indicative of the success of this policy. Dictionaries, in both freshwater and marine areas, collate common/scientific names and Show Classes; latest taxonomic name changes are swiftly issued as Supplements (the Cichlid Name Booklet had to be replaced within a year, such is the pace of progress!). Two Booklets for the specialist cover Rasboras and Goodeids. A continuing task throughout every year is the updating of the best-selling Booklet No. 6, the complete Show Fish Sizes, and the YEARBOOK (a complete Directory of FBAS services) both published each year in time for the new Show season.

The looseleaf 'Booklet No. 3' system was developed to allow hobbyists to collect information according to their own individual interests; Supplements are added to the basic book as required — their pages are specially numbered so that Show Class related fishes are automatically grouped together.

At 'Club-night' level, Federation Tape/Slide programmes, valuable programme aids in their own right, have also become a rescue service in the event of last-minute live

Speaker cancellations; the recently released Quiz Book (free to member Societies, on sale to others) includes other practical forms of entertainment too and backs up this programme support, again helping to fill that otherwise vacant evening. The Federation can also be seen working for the Societies, either directly or indirectly through its Area Groups, with its continuing support at Societies' Open Shows through its Judges, Show Stands, Brooch Scheme, and so on. For overseas Societies (and those in the UK beyond the normal reach of FBAS services) Associate Membership provides access to all the 'mail order' services — publications, tape-slide programmes, etc, many at discounted terms.

Also during the last ten years, the Federation has become increasingly involved with publishers, the initial venture being with EP Publications to produce AQUARIA in the 'Know The Game' series (now available through A & C Black). In 1983, in association with Blandford Press, the Federation played host to no less than GUNTHER STERBA, on the occasion of the publication of the English edition of the AQUARIST'S ENCYCLOPEDIA.

Looking to the future, thanks to generous support from **TFH PUBLICATIONS LTD**, we shall be hosting **FISHWORLD '88** at Alexandra Palace on 20/21 May 1988, and there will be other celebratory events during the Golden Jubilee Year in which we hope you will join. (We'll even consider having a portable TV set handy, just in case any of our events clash with lesser-important (?) world events which you might want to keep tabs on. All part of the FBAS service!)

Details of 1988 events, plus all FBAS services, are available from me, **FBAS General Secretary, Chris Cheswright, 2 Cedar Avenue, Wickford, Essex.**



A TALE OF TWO CHEMICALS

Even Koi experts can be caught unawares, as John Couvelier, and his fish, found to their cost.

No, this isn't a fable in time for Christmas, but a saga of disaster which happened to yours truly, and a salutary lesson in what can happen when an experienced Koi-keeper becomes complacent. Similar incidents occur often but usually go unreported in an effort to avoid embarrassment to those concerned who don't like to admit they've made a mistake. We have no such reservations, so read on and learn from your scribe's tragedy!

It all started in June of this year when, over a period of three days, the loss of 4 small Koi occurred, my first losses in nearly four years. The symptoms were rapid in progress from commencement to death, usually lasting for no more than 24 hours. Spot checks on pH, Nitrite etc. proved negative, no test for Chlorine was carried out as I had noticed no odour at the tap. (See my September article).

When yet another small Koi expired a couple of days later, examination of the gills revealed the classic signs of Chlorine attack i.e. 'burning' of gill filament edges. A Chlorine test showed an unbelievable ONE PART PER MILLION (1mg/l)! How I had not detected the odour of this high level, in view of my water treatment back-

ground, is something we shall never know. Mistake No. 1. I should have tested for Chlorine immediately. In mitigation I must add that in the five summers at this address, the level of Chlorine in the mains has never exceeded 0.1 ppm. Hence my complacency.

A call to the Scientific Services office of my local water authority resulted in a same-day visit from the duty chemist who, using identical equipment, obtained a reading of 0.6 ppm, the initial overdose having obviously been progressively diluted as the day wore on. The chemist agreed that her findings were excessive and departed, hopefully, to find the cause of the treatment mishap.

In the meantime, all fresh water input to my filter system was shut off and all pool cleaning/topping up suspended. During the next few days it was obvious that the initial heavy overdose had done its job on the filter bacteria and killed them off, resulting in a poisoned system. Fish continued to die, though by this time, the cause was suffocation due to high ammonia levels, together with other unknown nasties released by the dying filter.

When faced with this kind of situation, the normal remedy is as rapid a water change as the fish will tolerate. This option,

of course, was not open to me owing to the high Chlorine level in my only water supply, so I could only look on impotently while my Koi continued to die.

Correspondence with the Senior Scientist at the water authority resulted in the admission that, as a change in authority policy, a level of 0.5 ppm of free Chlorine could be expected in my area until such time as new equipment was installed. This was a bombshell indeed and necessitated a complete rethink on my regime of pool care and maintenance.

My second mistake was that of introducing a continuous trickle of mains water into the filter system, albeit via a needle jet spray bar. (Chlorine is introduced during treatment in gaseous form and is easily 'gassed off' under pressure PROVIDED THE DOSE DOES NOT EXCEED 0.2 ppm.) I must stress that the quantity of fresh water used in my system is only modest, some 200 gallons per day into 8,000 gallons. The filtered water is returned to my pool via a stream which enters the pool at its narrowest point, a favourite gathering place for my Koi who are always ready to catch any tit-bit which finds its way downstream. This gathering place received the full strength of the Chlorine overdose and the later Ammonia, etc.

Thankfully, the crisis passed in due course and, as I write this article, the surviving fish are blooming and appear to have come through unscathed. The final toll was 18 Koi, all but four of which were no larger than 6 inches in length, but we lost some very old friends who had been with us for many years.

The 'knock-on' effects have been both instructive and tedious. The massive disturbance to pool ecology, resulting from the original disaster and the subsequent strip-down and clean-out operation on the filter system, has meant an incredible bloom of blanket weed, something which has never before blessed our pool. Bunches 4 feet in length, so strong it requires a two-handed heave to remove it (if only someone could think of an industrial use for it!).

Cleaning and topping up now has to be taken very 'softly, softly', and the plumbing of fresh water has been modified so that mains water enters the system downstream of the filter. The Chlorine level still fluctuates between 0.4 and 0.6 ppm, way above safe levels for fish, unless diluted.

So, what lessons have been learned from this exercise? First and foremost, is the fact that complacency will cost the lives of your fish and a heavy burden of guilt. Secondly, always assume that, should a 'slug' of Chlorine come down the mains, it will always reach YOUR house during the night and do its damage before you are aware of it. Thirdly, NEVER introduce mains water at a point where it can knock your filter out and ALWAYS check for Chlorine.

I freely admit that, with hindsight, I should have known better, but I think we can all learn from my misfortune; at least I hope so! 1987 is a year which I shall be glad to forget, but as the (recent) photograph which accompanies this article shows, our pool is back to normal and looking bonny.

Naturalist's notebook

By Eric Hardy

Acid rain

Acid rain is much in the news, and although, as detailed in the Forestry Commission's recent Bulletin *Air Pollution and Forestry*, the part played by acid rain on trees is still controversial and it is only one of the causes of trees dying back over western Europe, there is no doubt about its adverse effect upon fish. Although conifers as they mature increase the acidity of rivers, thereby reducing aquatic insect-life and dippers which feed upon this, some rivers become acid without forestry and others were acid before conifer planting.

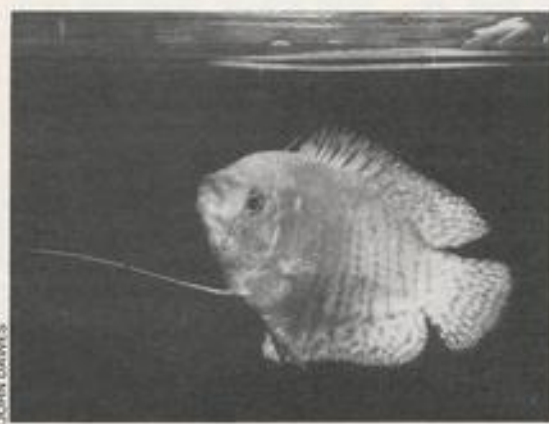
Our earliest angling days found more and bigger trout in chalk streams like the Avon, or limestone streams like Yorkshire's famous Driffield Beck, compared with the acid mountain pools of Wales. Skilled addition of chalk or lime has improved the stock of angling waters.

It was not surprising that the Surface Water Acidification Programme of the British Royal Society and Scandinavian Academies of Science not only proved recently the progressive acidification of lakes in Norway and Sweden from their changing diatoms, but the decline of fish populations.

Much of the trouble comes in gaseous oxides of sulphur blown from high chimney-stacks of power stations, smelters, refineries and chemical works burning fossil fuels, and in oxides of nitrogen from the high temperature in the stacks. The remedy there is to equip factories with cleaning filters, costly scrubbers and washers. Another source is liquid manure sprayed on fields, where much of its nitrogen goes into the air to combine with sulphur dioxide into a rain of dilute sulphate of ammonia. In Britain it is worst in Scotland where Pitlochry Freshwater Fish Lab showed that two south-western lochs lost their trout populations and streams in the upper Forth valley became too acid to support young salmon.

Acid tolerance

American Brook Trout are



Dwarf Gourami (*Cofisa latia*) can't tolerate water with a pH much lower than 6.5 for long periods.

the most tolerant of acidity among the salmonids, but the pH condition for aquatic life varies. Pond-snails, tadpoles and crawfish may begin to die at 6 to 6.5, Bass and Trout at 5.5 to 6, Pike, Perch and many fish eggs at 5.4 and most fish at 4.5. A pH below 3 is lethal.

In Scotland, the peak damage is about April and May and in some parts of east Scotland it drops to 4.5. The abbreviation pH means "pondus hydrogenii" and the figure behind it is the weight of free hydrogen ions per litre at 20°C. Some of the more acid-tolerant fish like Clown Loach, Cardinal Tetra, Congo Tetra, Discus and "Plec" catfish can't have it below 5.5, and Rosy and Tiger Barbs, Dwarf Gourami, Bronze Catfish and Red-tailed Shark below 6.5. Characins and barbs may go down to 6.6. Hard tapwater is usually about 7.8, soft water 6.7, clean rain 5.6. Below 7 it becomes increasingly acid.

In a recent water quality article, Dr David Pool stated Amazonian Discus and Tetras will breed in pH 4.5 to 6.5. Peat-bags are sometimes dragged through alkaline ponds to lower pH and control algal bloom and eutrophication.

The pH of water, which is used in the indirect estimation of CO₂ quantities, may be modified by biological activity or by CO₂ exchange with the air over long intervals. Fishtank and

field studies in the Royal Society programme show that acidity, together with calcium and some forms of aluminium, are the most important chemical factors affecting fish in lakes and streams. Acid waters with certain levels of aluminium impair the fishes' ability to maintain their body salt in freshwater, causing failure of their circulatory system. However, if a stream has a high calcium content trout will usually survive. Readers of the angling press will remember the controversy several years ago over the theory of adding chalk to a poor trout-lake.

Forests increase the deposit of sulphur from the air, which settles on their leaves and is washed down by rain, counteracting any acid neutralising capacity of the soil. Reducing this deposition is the aim of future research.

Floral Review

Acid-tolerating plants are called calcifuges, though some calcicoles (the opposite, favouring calcareous conditions) like Water Soldier, grow well in neutral or acid ponds. In reviewing Cambridge University Press's new £65 *Flora of the British Isles*, 3rd Edition, I was surprised to see the entire Zanicelliaceae, or Horned Pondweeds, had disappeared from the British flora! One of its authors, Professor Moore of Reading University, told me the omissions were probably due to their restricted time scale. Other misleading omissions seem to be due to the lack

of any scientific co-ordination in local plant-recording in Britain. Now the BSBI (Botanical Society) expects us to hand over our records to unknown county recorders, appointed without consulting active field workers, to record for us.

Contradicting the new *Flora* which doesn't include Lancashire in the distribution of the magnificent sky-blue Marsh-Gentian, *Pneumonanthe*, I counted 107 flower-spikes again this summer on Highfield Moss, between the Traveller's Rest footpath on the A572 Leigh-Newton road and the Wigan railway, Map Ref 612957, and a further 40 across the railway. It states Pink Purslane, *Mossia ibérica*, does not grow in East Anglia, but I pointed it out to my party near Norfolk's How Hill this year. It gives an isolated site for Lizard Orchid in Lancashire, but this has never been seen there, despite years of special searching where a child, years ago, entered a specimen, collected in the south of England, in Formby Flower-Show's children's wildflower section and because they had to be local, claimed it from the local dunes. It gives the southernmost British Dwarf Cornel on a Lancashire moor where fire exterminated it 17 years ago. It doesn't include the pink form of Yellow Rock-rose on the Great Orme this year. Nor is Lady's Slipper Orchid "extinct". It still flowers on the limestone hillside above Wharfedale's Dibscar Beck, over the wall beyond Bastow Wood by Grass Wood, Map Ref. 986663 at 300ft. I showed a histogram of its flower and leaf-spikes since 1930 at the British Association meeting in Liverpool University, 1953.

However, the book is a masterpiece which will be the standard reference for many years.

Marine Merger

Plymouth's famous 1888 Marine Biological Association laboratory is merging with that of the 1970 Institute of Marine Biological Research at Plymouth West Hoe, as a better centre for studying marine life, retaining the public aquarium.

SHOW REPORT

THE 1987 BRITISH AQUAR

by Dr. David Pool,
(Tetra Information Centre)

After 35 years at Belle Vue, the British Aquarist Festival moved to a new venue in the G-Mex Centre, Manchester. Despite the move, the show was still fondly referred to as the 'Belle Vue' show by many of the people attending.

For exhibitors, traders and visitors the new venue was a great improvement. The G-Mex centre (an old railway station specially converted into an exhibition centre) had well-distributed electricity and water supplies, making setting up the stands and tableaux much easier.

Everybody benefited from the spacious hall, easy parking and good refreshment facilities.

The Federation of Northern Aquarist Societies, who organise the show, left nothing to chance to ensure that it was a success. Widespread advertising in the aquatic and local press, on television and on local radio ensured that the

show was well publicised. This obviously worked with approximately 12,500 people attending over the two days.

Inside the hall there were numerous high-quality fish for the aquarist to see. And not just in the show tanks. The fish on sale were more varied and of a higher quality than I have seen for many years. I have no doubt that some of the fish sold this year will return in the near future to grace the exhibition aquaria.

Most of the major manufacturers were present at the show to display and sell their products. Once again the British Aquarist Festival provided an ideal opportunity for fishkeepers to view the full range of aquatic products (including many released in 1987) and to seek advice from the people who make or distribute them.

In all there were 24 trade stands at the show, slightly lower than the number attending in 1986 at Belle Vue. All of

the exhibitors commented on the success of the show. In fact, several had to send for new supplies on Sunday following hectic business the day before.

The quality of the fish and tableaux was, once again, of the highest order. This was adequately demonstrated by the very close points scores in many of the 58 classes.

The Harry Penhall Memorial Trophy for the best tableau was won by **Tongham Aquarist Society** for the second year running. Their display 'The Dilemma of the Tropical Rain Forest of the Amazon' included working models of trees being felled.

Best fish in the show was a

beautiful *Synodontis waterlorensis* owned by T. & D. Cruickshank from N.A.S.T.I.E.S. 'Rambo' the *Cichlasoma hartwegi* owned by Mr C Walton of Bracknell A.S. won the Champion of Champions trophy for the second time in succession.

The British Aquarist Festival provides the finale for the Federation of Northern Aquarist Societies show league. The league runs throughout the year with societies collecting points for each fish gaining a place card in a FNAS show. This year's league was topped by **Sandgrounders AS** with a magnificent 1090 points, well ahead of their close friends and rivals **Merseyside Aquarist**

The new BAF venue at G-Mex was well received by visitors, traders and exhibitors alike.



DAVID POOL



BRITISH AQUARIST

Tropical Furnished Aquarium (Society)
Halifax

Guppy
J. Chapman (D.H.S.S.)

Coldwater Furnished Aquarium (Society)
Halifax

Molly
J. & K. Corbett (Merseyside)

Tropical Furnished Aquarium (Individual)
A. Sinclair (Halifax)

Platy
D. Barrett (S.L.A.G.)

Coldwater Furnished Aquarium (Individual)
D. Shields (Halifax)

Swordtail
D. Barrett (S.L.A.G.)

Marine Furnished Aquarium
B. P. Jones (Wrexham)

Any other variety (Livebearer)
T. & L. Marshall (Merseyside)

Aquascape Furnished
Mr & Mrs Walsh (Darwen)

Any variety of livebearer (pairs)
D. Barrett (S.L.A.G.)

Novelty Aquascape (Individual)
Mr & Mrs Robinson (Scorpton)

Rift Valley and Lake Cichlids
P. & B. Jones (Wrexham)

Plants
D. Shields (Halifax)

Dwarf Cichlids — Any variety
Mr & Mrs Stansfield (Sandgrounders)

Common Goldfish and Comets
Mr & Mrs Walsh (Darwen)

Large Cichlids — Any variety
S. Tipper (D.H.S.S.)

Shubunkins (Bristol and/or London)
Mr & Mrs Silk (S.J.S.)

Any variety of Cichlid (pairs)
C. Tynan (Runcorn)

Moors & Veiltails
S. Whistler (Castleford)

Siamese Fighters — Any variety
S. King (D.H.S.S.)

Fancy Goldfish, Fantails, Orandas, Lionheads and any new variety
Mr & Mrs Colley (Oldham A)

Small Anabantoids — Any variety
Mr & Mrs Baldwin (Sandgrounders)

A.O.V. Coldwater Fish
D & B Penny (Yorkshire C.A.G.B.)

Large Anabantoids — Any variety
Mr & Mrs Baldwin (Sandgrounders)

Any variety of Coldwater (Pairs)
D & B Penny (Yorkshire C.A.G.B.)

Any variety of Anabantoid (Pairs)
Mr & Mrs Robinson (Scorpton)

Coldwater breeders (Any variety — Singletail)
D & B Penny (Yorkshire C.A.G.B.)

Small Barbs — Any variety
Mr & Mrs Baldwin (Sandgrounders)

Coldwater breeders (Any variety — Twintail)
Mr & Mrs Silk (S.J.S.)

Large Barbs — Any variety
Mr & Mrs Baldwin (Sandgrounders)

Any variety of Barb (Pairs)
T. & D. Cruickshank (N.A.S.T.I.E.S.)

Small Characins — Any variety
D. Cessar (Tongham)

RIST FESTIVAL

Society (736 points).

The show, at its new venue, was a great success, with many people claiming it to be the best ever. Congratulations, and

thanks, must go to the FNAS who, in conjunction with the *Aquarist and Pondkeeper*, organised the show and ensured that it ran smoothly.



Mr & Mrs Walton's 'Rambo' was Champion of Champions for the second year running.

DAVID POOL

ST FESTIVAL RESULTS

Large Characins — Any variety
J. T. Morris (Sandgrounders)

Any variety of Characin (Pairs)
Mr & Mrs Hulze (Oldham B)

Sharks and Foxes — Any variety
L. & M. Collier (Stretford)

Rasboras — Any variety
T. Wheelwright (Halifax)

Danios and Minnows
Mr & Mrs Baldwin (Sandgrounders)

Any variety of Carp and Minnow (Pairs)
S. King (S.J.S.)

Corydoras and Brochis Catfish — Any variety
Mr & Mrs Robinson (Scorpion)

Any other variety of Catfish
T. & D. Cruickshank (N.A.S.T.I.E.S.)

Any variety of Catfish (Pairs)
Mr & Mrs Walsh (Darwen)

Egg-laying Tooth Carps — Any variety
E. W. Braham (N.W.G.B.K.A.)

Any variety of Egg-laying Tooth Carp (Pair)
J. Roberts (N.W.G.B.K.A.)

Loach — Any variety
G. Barlow (Scorpion)

Any variety of Loach (Pairs)
Mr & Mrs Baldwin (Sandgrounders)

Tropical or Native Marine Fish — Any variety
P. & B. Jones (Wrexham)

Any variety of Tropical or Native Marine Fish (Pairs)
E. & S. P. Jones (Wrexham)

Any other variety of Tropical Fish not listed above
Mr & Mrs Walsh (Darwen)

Any other variety of Tropical Fish not listed above (Pairs)
C. Tynan (Halifax)

Breeders — Egg-layers (Category 1)
J. Chapman (D.H.S.S.)

Breeders — Egg-layers (Category 2)
R. Husband (Stretford)

Breeders — Egg-layers (Category 3)
Mr & Mrs Chadwick (Oldham B)

Breeders — Egg-layers (Category 4)
T. & L. Marshall (Merseyside)

Breeders — Livebearers (Category 1 & 2)
J. Chapman (D.H.S.S.)

Breeders — Livebearers (Category 3 & 4)
T. & L. Marshall (Merseyside AS)

Amphibians (Non-dangerous)
Miss Andrews (Belle Vue)

Champion of Champions

1. Mr C. Walton
2. Mr D. Black
3. Mr D. Sellsell

Best Tableaux

1. Tongham
2. Castleford
3. Bracknell

F.N.A.S. Show league (Final position)

- | | |
|------------------|------|
| 1. Sandgrounders | 1000 |
| 2. Merseyside | 736 |
| 3. Oldham | 412 |

Best Fish in Show: T. & D. Cruickshank

Best Pair of Fish: Mr & Mrs Walsh

Best Furnished Aquarium (Individual):

A. Sinclair

Best Furnished Aquarium (Society):

Halifax

Best Breeders Team: J. Chapman

Exhibitor gaining most points:

Mr & Mrs Baldwin

Best Tropical Fish: T. & D. Cruickshank

Best Coldwater fish: Mr & Mrs Colley

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GIVE SOFT CORALS A TRY

Mention corals and most people will instinctively think of the hard, reef-building types. However, as **Tim Hinitt** shows, there is also a very interesting "soft" option.



This "anemone" is not an anemone at all, but an anemone look-alike soft coral.



This is *Litophyton arboreum*, a good tree-like soft coral for the aquarium.



The finger-like lobes of *Lobotophyton* can be clearly appreciated in this photograph.

This is not a scientific treatise as I am certainly not a scientist, but an article based on factual happenings in my own 3ft (90cm) marine aquarium.

Some time ago I read an article in *Today's Aquarium* by Horst Kipper concerning the use of live coral in the aquarium. He stated that the coral, once established, has a beneficial effect on almost every aspect of the tank. I decided to investigate this claim for myself as I had never had a great deal of success with live hard coral and could not really see how it could benefit the aquarium (corals being so sensitive to the slightest deterioration in water conditions).

Mr Fish, a local dealer in Bedford, advised me that Horst Kipper was very probably referring to Soft or Leather Corals, rather than the much more delicate, hard, skeletal corals. I don't know whether, in fact, this was the case, but it is definitely proved, in my aquarium, that soft coral does have an extremely beneficial effect, both on the water quality and all the other inhabitants of the tank.

The aquarium to which I refer is the one that I wrote about in this publication in September 1986. It is an extremely basic set-up serviced only by an undergravel filter composed of large-grain coral gravel and coral sand. The two are separated, as they must be, by a gravel tidy, the only other mechanical aid being a powerful air pump to provide turbulence in addition to aeration. The undergravel, incidentally, is run by two 8 litres-per-minute powerheads. Water changes are effected at the rate of approximately 20% every six weeks. More does not seem to have any beneficial result. De-ionised water is used for these changes as our Water Board uses chloramine in its water treatment system and, although this may be partially removed by carbon filtering, I am not generally happy about the 30 to 40

ppm nitrate levels that exist for the greater part of the year. How harmful these NO₃ levels really are has not yet been proved conclusively, but I am unhappy to risk nearly £800 worth of livestock in finding out!

There are no protein skimmers or carbon filters used in this tank. In fact, I have found that carbon can have a negative effect on the water quality, unless the filter is run continuously and the carbon is changed very frequently. The alternative is to leave it in without changing for several months, when its biological action then takes over. I've found, however, that an increase in nitrate level then occurs.

Possibly the greatest effect that carbon has, in my opinion, is that it is not specific in what it removes from the water. In other words, it takes out both good and bad substances. Yet, in an invertebrate tank, it is necessary and beneficial to have planktonic life and some proteins available in the water. I have used carbon in all types of aquaria for several decades and it is only in the past three years that I have ceased using it on a regular basis. Although I am still experimenting in this field, results so far suggest, that, unless I change it on a weekly basis, I am better off not using it at all.

Water parameters in the aquarium are as follows: Specific Gravity 1.023-024, pH 8.2, KH 10-12 degrees, Nitrate 10-15 ppm, Temp 23°C.

The tank is populated by very large quantities of small Disc Anemones, about twelve small African anemones of unknown identity, two *Lysmata amboinensis* (Cleaner Shrimp), one *Stenopus hispidus* and an *Enamtopus dobellii* (Reef Lobster). In addition, there are three or four small fish and various Porcelain Crabs. This is all in addition to twelve large soft corals. All in all, quite a collection for a three-foot aquarium!

Soft coral comes in all shapes and sizes, but the ones to which I refer are those that are found on the reef flats in the Intertidal Zone. These species are able to withstand emersion when the tide retreats and occasionally leaves them high and dry. They do not have a bony skeleton as such, but are of a leathery consistency, reinforced internally, i.e. within the tissues, by rods and spicules of calcium. The shape and form of these calcium rods is very important in determining the species to which a particular coral belongs.

In my aquarium I have *Sarcophyton*, *Lobophyton* and several other large disc-like varieties whose identity, at the moment, I am unable to confirm. One particular species is very attractive in that it has very long polyps that, when extended, resemble a variety of sea anemone.

When purchasing soft coral be warned that, although a specimen may be only several inches across in the disturbed environment of the dealer's tank, once it has settled down, it may well expand to three or four times its original size. Although most soft corals, of the variety under discussion, will happily co-habit and even make contact with one another, they will not tolerate contact with stinging sea anemones. This

The Porcelain Crab can co-exist quite happily with anemones and soft corals — even if it doesn't particularly like members of its own species.



will cause them to shrivel and, ultimately, die.

The fish population has been restricted to three or four small species as the aquarium is, primarily, for invertebrates. They comprise one Pyjama Wrasse (*Pseudochilinus hexataenia*), one *Centropyge acanthops*, which is very useful in keeping down excess algae, a *Nemateleotris decora* Goby and a Long-nosed Hawkfish (*Oxyurhites typus*). This last fish is a most interesting and friendly little character which is quite happy to rest on the coral most of the day and will take food from the fingers. The *Esocinus* Blenny mentioned in my September '86 article had to be removed as it was rather too keen on taking chunks out of the *Lobophyton* coral. The two Porcelain Crabs fit very well into the scheme of things as they adapt quite happily to the Disc Anemones and, apart from being mutually aggressive, they do no harm whatsoever to any of the other inhabitants.

Lighting intensities must be high in a soft coral tank, but they need not be extreme. My tank is illuminated by three 30 watt Trulite fluorescents for fourteen hours per day. This appears to be more than adequate, provided that the corals are placed reasonably close to the water surface.

The shop from which the corals were purchased uses one 250 watt metal halide lamp per 2 ft cube tank. This may be ideal for the soft corals but the Disc Anemones appear to dislike this amount of direct light and will either close up or, if able, will retreat into darker crevices. I, personally, do not like the colour balance of metal halide lamps, and certainly not the formidable electricity bill! I consider that four 30 watt Trulite fluorescents would be ideal in the tank concerned, but do make sure that the hood is well ventilated in summer or else water temperatures will soar beyond reasonable limits, to the detriment of the entire aquarium.

By the very fact that soft coral are used to being stranded out of water in their natural state, it is obvious that they are considerably harder than their reef-forming cousins which would soon succumb to such treat-

ment. Many varieties inhabiting the reef flat, are, in fact, able to withstand tremendous temperature and water quality fluctuations.

Soft coral will almost certainly grow in any reasonably maintained aquarium. In fact, it can almost become a nuisance as it divides itself and spreads over your prized Disc Anemone colony. The amazing fact is that the Disc Anemones appear to benefit from the proximity of the coral. A one-inch specimen suddenly becomes twice the size and colonies appear where there were none before. In fact, you will find that the whole tank will start to blossom with new life forms and the fish will appear healthier. In my aquarium, I find that the water quality has been considerably more stable since the introduction of the soft corals.

Feeding does not pose any particular problem... DONT! Yes, that's right. It is not known for sure, but it is thought that this type of coral "absorbs" its sustenance through the body tissues. It therefore appears to derive its food from dissolved solutions in the water. I have tried feeding with various liquid solutions but this causes the coral to shrivel and appears to have no beneficial effect. It would seem that in a properly stocked and fed tank, there is quite sufficient nutrient without further additions.

Every week I add about ten drops of Sea Vita to the aquarium but, again, whether this is of benefit, is difficult to say. After the first three weeks, from a water change, I add fifteen drops of LIQUID Sea Buff to boost the cationic reserve of the water. Be very careful about overdosing of the POWDER Sea Buff to boost the anionic reserve as this will push the carbonate hardness very high very quickly which is not good for the coral.

One thing that I have noticed is that soft coral smells horrible! It has that sweet sickly smell of amines, almost as though it is rotting. Could it be that as plants in freshwater absorb nitrate and other toxins, soft coral behaves in a like manner in the marine aquarium, removing decaying proteins and other pollutants from the water?

If so, surely we have found the ultimate water treatment system!

News from the societies

Basingstoke & District Aquarist Society

Basingstoke & D.A.S. held a highly successful 28th Open Show on 13 September 1987. More than 300 entries were booked in by societies from as far away as Liverpool. An international touch was brought to the proceedings by the presence of Herr Herbert Monien, the President of the West Berlin Society, who was visiting the UK at the time and kindly presented the prizes.

Highest Pointed Visiting Society: North Bucks AS

Highest Pointed Exhibitor: Mrs B. May of Pangbourne

Highest Pointed Junior: Darren Irvine of North Bucks AS

Highest Pointed Exhibitors (Basingstoke): L. & I. Gale

Best Fish in Show: Adrian Blake of Basingstoke with an *Aphyoseion mento*

Ochils Aquarist Society

Jessie Ross, Secretary of Ochils Aquarist Society, reports that the first O.A.S. Open Show, staged earlier this year, was a big success. Sincere thanks go to all the shops and firms (too many to mention but spread out over England and Scotland) who donated prizes for the show. A big "Thank you" also goes to Kirkcaldy A.S. and Perth A.S. who lent much appreciated support.

Further information about O.A.S. is available from Mrs Jessie Ross (Secretary), 22 Gartmon Road, Sauchie (By Alloa), Clackmannanshire, Scotland, FK10 3NX. Tel. (0259) 213893.

COLDWATER QUIZ

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Before you know it, Christmas has come and gone . . . and along with it endless hours of mental torture wondering what to do with all that time you've got on your hands.

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Just run through the following 15 questions and send us your answers to reach us by 7 January 1988 at the very latest. The first FIVE correct entries will each win a FULL-YEAR'S supply of *A & P*, delivered FREE OF CHARGE on publication each month. Make sure that you write your name and address in **BLOCK CAPITALS** on your entry and send it to **Aquarist & Pondkeeper, (Coldwater Quiz), 58 Fleet Street, London EC4Y 1JU.**

The Questions

1. What is the Latin name for the Goldfish?
2. From which country are Koi traditionally thought to have originated?
3. What is the name of the protective outer layer secreted by fish?
4. What is the natural coloration of the Goldfish?
5. Name the main organs used by Koi and bottom-feeding fish to assist them in finding food.
6. What is the major sensory organ of most fish?
7. Name the three types of scaling found on Goldfish.
8. What should be the predominant colour of the Shubunkin?
9. Name the main characteristics shown by a male Goldfish in spawning condition.
10. What has traditionally been considered to be the main genetic characteristic of "black" Goldfish?
11. Are Goldfish edible?
12. Do fish have eyelids?
13. What is the proper name for the "water flea"?
14. Give the correct names for each of the following fins: a) the back fin; b) the tail fin.
15. What is the popular term for the parasite "Ich"?

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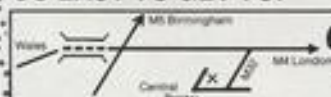
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Your questions answered

Having problems? Send your queries to our panel of experts who will be pleased to be of service. Every query receives a personal answer and, in addition, we will publish a selection of the most interesting questions and responses each month. Please indicate clearly on the top left hand corner of your envelope the name of the expert to whom your query should be directed. All letters must be accompanied by a S.A.E. and addressed to:

Your Questions Answered, The Aquarist & Pondkeeper, Buckley Press Ltd, 58 Fleet Street, London, EC4Y 1JU



TROPICAL
Dr David Ford



COLDWATER
Pauline Hodgkinson



PLANTS
Barry James



KOI
Roger Cleaver



MARINE
Graham Cox



DISCUS
Eberhard Schulze

Tropical Channel problem

I bought a Thin Blue Channel Catfish some time ago and put it in my tropical community tank. It soon ate all my Zebras and Neons and is now 5 inches long. Will it grow any more?

Your Channel Catfish is *Ictalurus punctatus* from the Great Lakes of Florida and Texas. It is a coolwater fish really (ideal temperature 18°C). Young small specimens may be peaceful and useful scavengers in the coldwater and tropical tank, but as they grow they eat everything, including any fish they can fit in their mouth. Since the adult size can be around 90cms you will have a major problem soon...

King-sized Pleco

I own a Plecostomus which I bought five years ago when it was one inch long. It now measures 16 inches! Will it grow any larger?

Plecostomus, now called *Hypostomus*, can grow to 24 inches in the wild, but usually only half this size in the aquarium. Time alone will tell how big your specimen will grow,

As this photograph shows, Plecos can grow to a very large size

but 2 feet is possible!

Although a well-known algae eater, this fish can also be carnivorous and thrives on meaty foods like earthworms and shellfish. It is nocturnal really, but may adapt to life in your aquarium and may show itself in the daytime. The species prefers hard, alkaline waters at 75 to 80°F (24-27°C).

Fleshy growth

My Convict Cichlid looks healthy but has developed a fleshy growth on one of its pectoral fins. The growth occasionally becomes inflamed but does not seem to affect the fish. Can you help?

Growths are actually very common in fish; most are benign and cause no problem. The presence of inflammation is a different matter — this indicates a bacterial problem,

and needs attention.

Treatment with proprietary medicines are usually ineffective because antibiotic treatment is required and the Law does not allow their free sale. You need to visit the local Vet. to get a prescription for such treatment. Medicated foods are now available (through the Vet) that should reduce the inflammation.

Large growths can also be removed by the Veterinary Surgeon under anaesthesia, but this treatment is expensive, of course — there's no National Health for petfish!

Coldwater Ice & dirt

There were two problems with my pond over last winter. The first was ice, the second, dirt.

How should I cope this coming winter?

Many pondkeepers are now keeping a heater in their pond over winter in order that the slight warmth given off will maintain a hole in the ice to allow all the gases to escape, which otherwise would be a danger to the fish. These gases are created by the mulm and rotting plants and dead leaves which have fallen into the pond during autumn.

However, the majority of pondkeepers prefer to give the pond a good clean-out after the leaves have fallen in late autumn so that, by eliminating the cause of the problem, any expense occurring from the running of a heater is avoided.

Spring is a time when you should, if cleaning was not undertaken in autumn, make a fresh start and clear out and clean up the pond. Set aside several containers filled with pond water to house the fish. A child's paddling pool, providing that it is well netted against predators, is ideal. Begin to drain off the water, removing the plants as they become visible and easy to handle. These can stand in buckets or similar containers. The mulm from the bottom of the pond can be used as a fertiliser on the garden. Some of the lilies might need to be split and re-potted.

After you are satisfied that your pond is properly cleaned up, you can start the hose to re-fill it. The addition of a water conditioner can be added according to the maker's instructions. The following day



the fish can be returned to the pond, after first floating them for about ten minutes and gently mixing old water with new to acclimatise them before releasing them.

Marine Yellow water

At present my seawater has a yellow tint. What causes this, and, is it dangerous?

This is a very dangerous early warning sign for the more delicate creatures in the system. The yellowish discoloration is caused by the presence of a phenol-related toxin in the seawater produced by all fishes and invertebrates as a part of their excretion.

As soon as possible you should purchase an external powerfilter and fill, at least, one third of the internal volume of the filter canister with ultra-high-activity, marine grade charcoal. This charcoal will absorb all these toxins from the seawater and considerably extend its useful life.

Koi Deep-frozen eggs

Is it possible to keep Koi embryos in suspended animation by deep-freezing the eggs?

I have asked Dr David Ford of 'Aquarian' on your behalf and he says that it should be possible, in principle, to freeze Koi eggs using liquid nitrogen.

I am sorry that I cannot give you more information. However, the following may be able to help you further:

1. Dr. A. M. Powell, The Ham-

let Partnership, Hamlet, Denton Green, Cuddesdon, Oxfordshire, OX9 9JD.

2. N.T. Laboratories Ltd, Unit 13, Branbridges Industrial Estate, East Peckham, Tonbridge, Kent TN12 5HF.

Plants A miscellany

I would like to use fine gravel as a substrate in my tank, with an added gravel additive.



Hottonia inflata, the tropical Water Violet.

Would I also need to use a fertiliser, and if so, which?

2. What is the best temperature for tropical aquatic plants?

3. What would be a reliable red bunch plant for such a tank?

4. Is Hottonia inflata a good middleground plant?

5. Is dried sphagnum moss covered with fine gravel a good planting medium?

1. You should always use a good fertiliser such as Dupla-plant.

2. The best temperature range for most tropical aquatic plants is 76-78°F (24.5-25.5°C).

3. Red Telanthera, *Telanthera lilacina* is a good, reliable red plant.

4. Yes, *H. inflata* is a good middleground aquarium plant.

5. Sphagnum moss contains little nourishment and is not therefore a particularly good growing medium.

COMPETITION WINNERS

IMMEL RED SEA COMPETITION

First (Red Sea Invertebrates): Mr P. J. Hills, Flat 20, 6 Lansdowne Road, Worthing, West Sussex, BN11 4NA.

Second (Red Sea Reef Fishes): A. Greenslade, 137 Findon Road, Findon Valley, Worthing, West Sussex, BN14 0BQ.

Third (The Red Sea): J. T. Loveday, 71 Whitefields Road, Cheshunt, Herts. EN8 0EL.

EVERGLADES COMPETITION

R. Love, 11 Bower Court, Princes Road, Maybury, Woking, Surrey, GU22 8HB.

Thomas Weaver, 24 Badsey Road, Lion Farm Estate, Oldbury, West Midlands B69 1BX.

R. D. Dyer, 15 The Fairways, Aldwick Bay, Bognor Regis, B021 4ES.

TYRO'S T.F.H. COMPETITION

D. G. Denning, 46 Holmleigh Avenue, Dartford, Kent DA1 5AS.

Sincere thanks to *Immel*, *Everglades*, and *T.F.H.* for their generous sponsorship, and to all the hundreds of *A* and *P* readers who regularly take part in our popular competitions. Watch out for more exciting competition news in 1988.

NEXT MONTH

Start the year right with January's information-packed issue of *A* and *P*.

New series include *Koi Talk* by one of our resident experts, *John Cuvellier*, and *Seaview* by regular *A* and *P* contributor *Gordon Kay*.

Both series are aimed at keeping you up-to-date with the latest *Koi* and marine matters respectively. They will also provide a wealth of thought-provoking and (hopefully) correspondence-provoking ideas, facts and reports... not to be missed.

January is also the first of our 1988 batch of popular 'Focus' issues. This time round, the topic is one close to the heart of every aquarist and pondkeeper — *Water Quality*. Contributing to the subject will be *Dr David Pool* (Tetra), *Dr David Ford* (Aquarian) and our own *Product Round-up* author *Dick Mills*.

For *Killifish* fans there is the first article in an occasional series by *John Skillcorn*, one of the new crop of exciting writers who will be contributing regularly to *A* and *P* in 1988.

FREE COMPETITION

And to ensure that we get just the right sort of lift off for the year *Minireef* are giving away a superb complete set-up in an exciting free-to-enter *NEW YEAR* Competition. Don't miss this golden opportunity to win the aquarium system you've always wanted. Just enter our *Minireef* competition and you could enjoy the perfect start to 1988.

Rounding off our January issue will be our ever-popular regulars, plus as ever, one or two other in-depth authoritative features by top writers from home and abroad. **SEE YOU IN JANUARY.**

FRED THE PIRANHA.

WILDLIFE UNDERWATER
XMAS SPECIAL
NARRATED BY
DAVID
A.TENBOROUGH.



©'87 PETER McGEOUGH.



Coldwater jottings



Stephen J. Smith

"Dear Santa..."

At the top of my Christmas list this year has got to be the latest in the Interpet Guide series — **The Interpet Guide to Fancy Goldfishes** by Dr Chris Andrews.

For me, this is easily the book of the year. Scores of colour photographs of most varieties of Fancy Goldfish are included to whet the appetites of even the most hardened coldwater aquarist; while concise and practical information is provided on all aspects of Goldfish keeping.

Even for those who may have had no previous interest in fish, this book is bound to stimulate further involvement in the hobby.

Produced in consultation with Goldfish enthusiast Pam Whittington, this guide really leaves no stone unturned in highlighting every area of this most-enjoyable hobby.

As with the majority of books of this nature, the usual subjects of anatomy, feeding, pests and diseases, and setting up an aquarium, are all covered. But their presentation is far from boring while the colour photographs and diagrams leave nothing to chance.

However, the depth of information incorporated in the book surpasses similar volumes at twice the price.

For example, pigmentation and water requirements are dealt with in a simple, un-

cluttered and informative style.

Particularly impressive are the several pages on breeding and rearing Goldfish. This section uses a considerable number of first-rate colour diagrams and photographs to illustrate the text, which covers: choosing the parent fish; preparation for spawning; hatching and development of young fry; and rearing, culling and line-breeding.

Very few books on Goldfish have, in my opinion, served any real justice to the beauty and splendour of these jewelled fish.

Fancy Goldfishes is a marked exception.

The author has not been content with simple line drawings to illustrate varieties of Fancy Goldfish. Several photographs of good quality examples of each strain are used liberally — each picture covers two pages occasionally — to illustrate the text.

It would appear that Society standards have been well-observed: the text is mainly correct and, in contrast with lesser publications, few "poor" specimens are illustrated.

Just about every Goldfish photographed is a joy to behold: half-a-dozen Lionheads; several Orandas, Fantails, Shubunkins and Comets; as well as a broad selection of Bubble-eyes, Celestials, Pom-poms and Pearl-scales; all complemented by

An Interpet Guide to Fancy Goldfishes — top of my Christmas list this year.



pictures of many lesser-known varieties.

Every home, school library and society must seek to possess at least one copy of this book. Every child (from eight to 80!) should try to persuade Santa to put one in their stocking this Christmas. And every fish-keeper who can claim any interest in the aquatic hobby will without doubt possess **An Interpet Guide to Fancy Goldfishes** before long.

An **Interpet Guide to Fancy Goldfishes** by Dr Chris Andrews is published by Salamander Books, priced at £4.95.

Stocking fillers

Virtually every coldwater enthusiast, at one time or another, needs to produce great quantities of newly-hatched Brine Shrimp to assist with early growth of fry.

Several methods are available to the hobbyist, ranging from the aerated sweet-jar to specially-designed proprietary kits.

Two such kits have proven invaluable throughout the past year's breeding season; and without doubt, would serve as ideal stocking-fillers — even for those fishkeepers who believe they have everything!

One is the **Complete Hatcher Kit** from New Technology, retailing at around £6.75; while the other is the **Clearsel Artemia Kit** at around £10.00.

Both of these kits represent excellent value for money, are extremely straightforward and reliable in use, and incorporate everything you need, apart from water and airpump, to ensure that your fry are provided with plenty of good live food at an early age.

The **Clearsel** kit consists of two sets of equipment to ensure a continuous supply when used in rotation. Each set comprises: suspended hatching cone, pipette with valve and airline, specially prepared saline "mix", and *Artemia* eggs. A black "hood" and sieve are also provided, to assist in separating the larvae from the eggs during harvesting.

Full instructions are included and there are enough eggs to last at least a season, depending upon consumption. The kit is

available from all Underworld Products' distributors.

New Technology's Brine Shrimp Hatcher is designed for use within the aquarium itself where, the company says, all the light, heat and air are provided.

The kit itself includes: hatch-



The complete Brine-shrimp hatcher from New Technology provides a constant source of brine-shrimp nauplii of young fry.

ing chamber, airline, eggs and brine shrimp food and, in my opinion, is probably better-suited for production of more mature brine-shrimp.

Interpet have sent me details of further new products which would serve as admirable last-minute stocking fillers this Christmas.

Their **Airstream Sponge Filter** is another accessory which serves a useful purpose in rearing fry — and it functions admirably with mature fish.

The filter retails at around £1.35, incorporates multi-positional flow director, and can be used with any air pump.

And if your air pump fails, or if you need aeration for transporting fish, Interpet's recently-introduced **Battery-operated Air Pump** will prove to be a saviour.

This is priced at around £7.50, uses two one-and-a-half volt batteries, and is capable of pumping air at a depth of 18 inches.

Greetings

Finally, by best Christmas Wishes are extended to all readers of **Coldwater Jottings**, as well as correspondents, companies, and societies who have provided information or assistance throughout the year.

Books

Aquarium Atlas

By: Dr Rüdiger Riehl and Hans A. Baensch
Published by: **Hans A. Baensch**
Distributed in the UK by: **Rolf C. Hagen (UK) Ltd.**
ISBN: 3-88244-050-3
Price: r.s.p. £19.95

Nearly 1000 pages for £19.95 can't be bad. In fact, when you consider the **quality** of the material itself, it's excellent value for money.

There can be no disputing the expertise of the authors, both of whom are better known in Europe than in the UK. Their knowledge shines through on every page of text, their research has been thorough and their delivery is direct.

In fact, in one or two instances, one could say that the delivery is uncompromisingly direct. In particular, the short section on water hardness gets straight to the heart of the matter and therefore runs the risk of confusing the uninitiated, rather than informing him/her. I would have liked to have seen a somewhat "gentler" introduction to this potentially difficult topic, but, despite my reservation on this count, I still consider this volume as a highly desirable and worthy piece of work.

The text has been translated from German and is mainly aimed (I think) at the US, rather than the UK, reader. As long as this is realised, then statements like "water weighs about eight pounds per gallon" should cause no difficulties (a US Gallon is smaller than ours, an Imperial Gallon weighing around 10lbs). On the dimensions and temperature side, it is good to see that inches/centimetres and centigrade/fahrenheit scales have been used, thus easing interpretation all-round.

The **Aquarium Atlas** is much more

than just an Atlas. It contains basically everything one needs to know about setting up and maintaining freshwater aquaria, as well as giving details of 100 plants and 600 fish. The "general" section takes up about 200 pages at the front of the book, and nearly 80 at the back. The plant and fish sections lie between and carry a wealth of information in a highly professional and condensed form. Particularly gratifying to see is that nomenclature is as up to date as is humanly possible, often a major failing in extensive works of this kind.

As a state-of-the-art work on freshwater aquaria, you'll be hard pushed to find something better than the **Aquarium Atlas**... especially at this price.

John Dawes

Book of Marine Fishes

By: Hillary Hauser (with photographs by Carl Roessler, Jack McKenney, Paul Tzimoulis, David Doubilet, and others).
Published by: **Pisces Books/Tetra Press**,
ISBN: 0-86636-021-2
Price: £14.95

This colourful and spectacular book takes a rather unusual, but most welcome, approach to tropical marines. Rather than dwell on the "aquarium" qualities of individual species, or on photographs taken in aquaria, it concentrates on superb portraits of over 90 species, all taken in the wild, by some of the world's leading underwater photographers.

Each photograph is accompanied by a page of information on the species concerned under the headings "General Remarks", "Physical Characteristics and Range" and "Diet and Habits". In addition, details of the photographer, the location where the photograph was taken, the type of camera, film, exposure and flashgun used, and the distance-from-subject, are provided.

Species are grouped in families in phyletic sequence, i.e. in "evolutionary" order, which takes the reader from the most primitive subject photographed, the Tarpon, to the Molas or Sunfishes at the other end of the spectrum. In between, there are numerous species which are familiar to most marine aquarists who, therefore, are provided with a rare opportunity to see their favourite fishes in their natural environment.

The **Book of Marine Fishes** has already been selling well and will undoubtedly become a much-sought-after book, ideally suited not just to specialist marine hobbyists, but to anyone who is looking for a fish book with a difference.

John Dawes

The Complete Book of Aquarium Plants

By: Robert Allgayer and Jacques Teton
Published by: **Ward Lock Ltd.**
ISBN: 0-7063-6614-X
Price: £16.95

Robert Allgayer and Jacques Teton are both well-known and respected "aquatic" authors on the Continent, particularly in France. The **Complete Book of Aquarium Plants** is the English translation of the authors' **Plantes et Decors d'Aquarium**, already well established in Europe as a leading book on aquarium plants and planting, and now destined, in my opinion, to make its mark over here.

There are four main sections in the text: "From Natural Habitat to Aquarium", "The Requirements and Maintenance of Plants", "Decoration" and "Plants". In addition, there is a Glossary (plus a section on Units used in the book), an Index of Species and an Index of Genera. Put together, they add up to a really comprehensive and attractive book on the subject of aquarium plants.

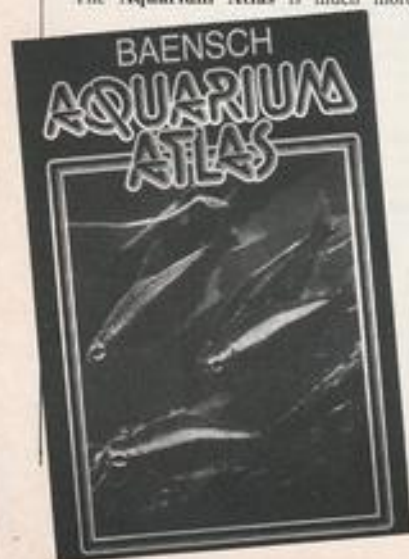
The text is written, largely, in the "Continental" manner, i.e. straightforward, no-nonsense, detailed style, with numerous charts, tables and diagrams which appear to leave no stone unturned and therefore tackle virtually every aspect of tank decoration, installation and maintenance one could think of.

Of particular interest to me were some of the chapters in the "Decoration" section dealing with the setting up of Dutch, Central American, South American, African (including West African, Congolese and East African), Asian and European tanks. Each of these carries, not just hints on layouts, but also suggested water conditions, light regime, substrate types, decorations, suggested fish species and, of course, recommended plants.

The main "Plant" section itself takes up about 50 pages and deals with some 150 species, most of which are also illustrated. All the basic cultivation details are, naturally, given for each species, along with a lot more besides, such as the suitability of various plants for aquaterrarium cultivation, propagation, flowering requirements, and so on.

The **Complete Book of Aquarium Plants** aims to become, quote, "essential reading for beginners and established enthusiasts alike". Even at £16.95, it stands a pretty good chance of achieving this.

John Dawes



OUT AND ABOUT

with John Dawes

The Bristol Aquatic Centre

There used to be a popular fish shop tucked in on the corner of the road leading from the Triangle (near Bristol University) to Clifton (home of the famous suspension bridge).

Queens Road Aquatics did very brisk business over the years but, even so, the limitations exerted by the restricted premises meant that the proprietor, **Stuart Jenkins**, could not do half the things he wanted.

All that's changed now with the recent move down to the road leading off Broadmead, one of the main shopping areas of this bustling city, northwards towards Filton (on the A38).

As soon as you walk in, you know straightaway that the **Bristol Aquatic Centre** has been very well thought out (right down to the pleasant background music) and that no corners have been cut. The place is light, clean, well laid out and spacious — very spacious indeed, and even has its own, well-stocked cafeteria.

The thinking behind the Centre is that it should provide customers with a place that, not only caters for their every need, but does so in an attractive and welcoming atmosphere. This is something that Stuart has been striving to achieve for years, but has only recently had the facilities to put his ideas fully into practice. Not surprisingly, he is delighted with the outcome of the move,

As Stuart Jenkins demonstrates, his Koi are large and friendly.



JOHN DAVES

and the public have responded accordingly.

There are about 300 tanks in total divided into several sections, e.g. Singapore imports, African section, marine fish, invertebrates, and so on. Behind the scenes, each section has its own centralised filtration system which allows Stuart and his Livestock Manager, **David Spence** (a very well-known and knowledgeable figure among tropical hobbyists), to

monitor and adjust each system as conditions dictate. Also hidden from view is an extensive quarantine section in which imported fish are acclimatised for at least one week before being put on sale.

The coldwater section consists predominantly of large, filtered, aerated and well-illuminated troughs housing anything from 2-inch Goldfish to 2-foot Koi of excellent quality, and very friendly disposition.

Then there are ponds, liners, pond equipment, aquarium dry goods, foods, aquarium and pond plants, books and a host of other items. It is therefore difficult to imagine that you won't find something to meet your needs at the **Bristol Aquatic Centre**.

Disabled aquarists need have no fear either. Although there are some steps on the way in (there was no feasible way of overcoming this problem, despite discussions with the Council), there are also very willing hands to transfer wheelchairs safely from street to shop level. Once inside, there's space all the way round. There is even enough room between the rows of tanks to back a chair up sufficiently to see into the top tier without any trouble.

All in all, the **Bristol Aquatic Centre** is a significant step towards enhancing the public image of what an aquatic shop should be. It also marks a major stage in Stuart Jenkins' dream of providing the "ultimate" aquatic retail shop — and all within two minutes' walk from Broadmead Shopping Centre in the heart of Bristol.

Opening hours: Monday-Saturday: 9.30-6.00 p.m. Thursday (late night): 8.00 p.m. Contact **Stuart Jenkins, Bristol Aquatic Centre, 4-10 Stokes Croft, Bristol BS1. Tel: (0272) 420927.**

News

Changing role for Jerzy Gawor

Jerzy Gawor, Director of **Aquality Ltd**, and head of the aquatic consultancy company **JG Associates**, has recently sold his retail aquatic business in Southwood Road, New Eltham, SE London.

"Running a retail shop and being involved in other projects, including aquatic shop design, staff training, article writing, aquatic display design, film and exhibitions, became too much of a schedule to fit into a

twenty four hour day", says Jerzy.

Thus, the retail part of the business was sold as a going concern, releasing more time for these projects.

During his time in the shop Jerzy ran the **Aquality Fish Diseases Laboratory** and has helped many thousands of aquarists up and down the country with their aquarium and ponds problems.

His notes and records of

several thousand case histories will form the backbone of a book (or series of books) which he hopes to begin shortly on all aspects of fish health, aquaria/pond set-ups and maintenance.

Meanwhile, **Aquality Ltd** is concentrating on formulating 'micro-chip' systems for helping in rapid diagnosis of aquarium and pond problems (more details soon).

Jerzy would like to thank the many readers and customers of

the retail shop, for their support over the last seven years.

The retail shop at Southwood Road, is under new ownership. **Mr Joseph Daniels**, a keen aquarist and expert herpetologist, is now trading at New Eltham as **Fiveways Aquaria**.

Should any aquarists wish to contact **Jerzy Gawor**, they can do so by writing to this magazine. Your correspondence will be passed on.

Tomorrow's aquarist

A fish is not just for Christmas

Every year you will find lots of notices saying 'A dog is not just for Christmas' or a cat or anything else; but you will rarely, if ever, see a sign saying 'Fish are not just for Christmas'. And yet exactly the same applies to them.

Keeping fish is **NOT** the easy way out just because you want to keep a pet that requires no exercise, little feeding and not much looking after.

On the contrary, fish do need exercise. The fact that they exercise in water just makes it that much more difficult. Their tank has to be the right size to allow them to move about freely and grow comfortably, it mustn't be too crowded and it must contain sufficient shelter. There are plenty of books around telling you how to set up a tank properly, so go and buy one before you even think about keeping fish. As a very rough guide you **MUST** allow, at the very least, six square inches of water surface per inch of fish length.

Fish feeding is almost an art. They must have the correct diet in the right amounts; it's no good feeding carnivorous fish with a vegetable diet, or vice versa, on a permanent basis. And it is certainly no good to just dump food in when and if you feel like it. (How would you like to be fed that way?) There is a wide range of food available from many different manufacturers, so find that right type of food and feed it correctly, in the right amounts and at the right times.

Equally, fish require a great deal of looking after. The tank must be kept clean and that means filters, which have to be cleaned regularly. It also needs light and oxygen to maintain a viable ecology. Plants provide some oxygen, but they need gravel (or other substratum) to root in, and they need to be planted properly; certain plants won't grow well with others, just like a garden. In fact, if you think of the tank as a garden you won't go far wrong. It needs to be kept in good condition, otherwise it will just

become a mess and an eyesore.

Selecting the right fish to live together in the tank is vital. Don't try putting Piranha with Neons — the latter won't survive long! Equally, don't stock the tank with just one kind of fish if you are a beginner. There are a number of ecological niches in a tank and it is possible to select the right fish to fill them all with a bit of care

and attention. Whatever you do, don't just buy fish because you think they look pretty; some of the most colourful fish of all are the marines and if you try putting them into an ordinary tank . . .!

Fishkeeping is a joy, albeit a time-consuming one, and if you are not prepared to devote the time and energy necessary to it, then I sug-

gest that you take up keeping Garden Gnomes, or, possibly, lumps of rock instead.

So, before you buy a fish tank, let alone the fish, go and find out just what is involved. If you can't find a local club then go to the library and read up on the subject first. Finding out first will save you a lot of trouble and it will keep your fish alive and in good health.

The Self Help Club

We've had a letter from Peter Crawshaw containing some tips about breeding livebearers. Unfortunately, we haven't got enough room to show you all of the text, but here are the condensed highlights:

1) Above all else have patience.

The best results, despite what you hear about how easy a fish might be to breed, come through having patience and taking time to get your fish into good condition in the first place.

2) Feed live food regularly

Use a Brine Shrimp Hatcher and you will always have a

constant supply of fresh food, which is a good supplement to flake food. Feeding livefoods will soon get your fish into peak condition.

3) Always have more females than males.

This will avoid fighting between the males as they compete for the females; you are interested in producing fry not in staging fights. The females may be less attractive, but tattered and torn males are in no condition to breed successfully.

4) Use a breeding tank.

For a small outlay you can set

up a separate tank for breeding and save yourself a lot of hassle by avoiding having to panic all the fish as you try to net the fry. Besides, it is easier to rear on and sex the fry if they are in a separate tank.

5) Shop around for your breeding fish

Don't fall into the trap of buying the first fish you see. Take your time deciding which one you want. Always buy the most active fish in the tank. Don't buy lifeless-looking, pale, battle-marked or injured fish. If you find a tank that contains only half a dozen fish in a shop, then all the best ones will have already been sold.

6) Timing.

The fish will be in a state of shock from being carried around and must be allowed time to recover, so don't buy fish as soon as they are delivered. Wait for a bit, by which time the fish will have had time to re-acclimatize themselves after their journey.

Thanks for the tips, they're all common sense, but in our haste to breed our fish this is something that we all are liable to forget. I hope you will enjoy your 'prize' — a copy of **Keeping Aquarium Fishes (Corydoras Catfish)** by David Sands (published and distributed by Dee Bee Books), and available from **Dee Bee Books, 21 Birch Lane, Whittle-Le-Woods, Chorley, Lancs, PR6 7NN. Tel: (02572) 67746.**

There wasn't room for Tyro's Diary this month but it will appear again a.s.a.p. 'Bye for now.

TYRO'S (AQUARIUM ATLAS) COMPETITION

This month I thought we'd do something a bit different. Instead of identifying fish or plants, the task is to identify the original countries or regions of the following five fish (the names of the countries have been jumbled up). Even if one species is found in several countries, only one of these will be included in the list.

This month's exciting prize is a copy of Rudiger Riel's and Hans Baensch's superb 'Aquarium Atlas', kindly donated by the sole UK distributor for this volume, **Rolf C. Hagen (UK) Ltd.**



COMMON/SCIENTIFIC NAMES

Neon Tetra (*Paracheirodon innesi*)

South African Mouthbrooder (*Pseudocrenilabrus philander*)

Siamese Fighting Fish (*Betta splendens*)

Zebra Danio (*Brachydanio rerio*)

Swordtail (*Xiphophorus helleri*)

COUNTRIES/REGIONS

CAMBODIA

AMAZON

INDIA

MEXICO

ZAMBIA

Answers as always, on a postcard only please, to **Tomorrow's Aquarist (Aquarium Atlas Competition), Aquarist and Pondkeeper, 58 Fleet Street, London, EC4Y 1JU.** The closing date is 21 December.