

FISH WORLD *Magazine*®



aquarian

1997 SHOW DATES

(Rule Codes: A=A of A; FB=FBAS; FN=FNAS; FS=FSAS;
I=International Goldfish Standards; N=NEFAS; U=USofA; Y=YAAS)

1.6.97	Derby & D.A.S.
1.6.97	Erith & D.A.S. (FB)
7.6.97	South Park A.S.S. (I)
8.6.97	Redcar A.S. (N)
14.6.97	Bristol Tropical A.S. (New Date)(FB)
15.6.97	Hallon A.S. (FN)
21.6.97	Welland Valley A.S. (FB)
22.6.97	Wokington A.S. (FS); Tameside A.S. (FN)
29.6.97	Seascale Junior Fishkeepers (FB); St. Helens A.S. (New Venue)(FN)
5.7.97	Port Talbot A.S. (FB)
20.7.97	Bournemouth A.S. (FB); Swansea A.S. (FB)
27.7.97	Kent Association of Aquarist Societies (FB)
10.8.97	Whitby A.S. (N)
17.8.97	A.S.A.S. Show (FB)
24.8.97	TYNE TEES AREA ASSOCIATION (FB)
30/31.8.97	FISHWORLD '97, DUNSTABLE (FB)
	KOI SHOW
	BRITISH NATIONAL OPEN SHOW (Incorporating British Open Fish Championship)
31.8.97	Cramlington A.S. (FB)
13.9.97	Hounslow A.S. (FB)
14.9.97	Silktown Show Team (FN)
21.9.97	Grongemouth A.S. (FS)
28.9.97	Darwen A.S. (FB); Fair City A.S. (USA)
12.10.97	Salway A.S. (FS); W.A.S.P. (FB)
25/26.10.97	BRITISH AQUARISTS FESTIVAL, George Cernoff Leisure Centre, Manchester (FN)
31/10/2.11.97	SUPREME FESTIVAL OF FISHKEEPING, Weston
1.11.97	NATIONAL JUNIOR FISHKEEPING OPEN SHOW (FB)
2.11.97	SUPREME CHAMPIONSHIP & OPEN SHOW (FB)

Note to Society Show Secretaries:

The above dates are those available as FishWorld went to press. For the latest, most accurate dates and venue information (together with Trophy Allocations, where applicable), please refer to the Quarterly Supplement issued by the FBAS giving details of Shows around the country. The Show Supplement is available, price 50p post paid from:

Show Information,
FISHWORLD, 22 Flansled Avenue, Wembley, Middlesex HA9 6DL
In order to provide the most complete service to all Societies, please communicate your Show Information to the same address.

Dear Reader

Well, they say pride comes before a fall and boy, did we fall!

Having been so enthusiastic about the increase in the production team it was disappointing to see that the final product didn't reflect our hopes too well.

Apart from one or two wrong contact addresses in throughout the issue, there were other more obvious mistakes — one article concluded tacked on to the end of another, one question in the Grocklemania Competition had wrong initials (most of you spotted that!), a plant name was incorrectly spelt as were some fish names in the poem and a contributor had his name altered between the beginning and ending of the article and a question was omitted from the Junior Fishkeepers Association's Application Form.

Added to this the actual layout of the issue might have been used more efficiently, thus making more articles available to you in the same space, and you will see that we (well, me certainly) have much to apologise for.

On to this issue and you will find that, in keeping with the ever-improving climate, we're concentrating on outside pond-related subjects although we haven't forgotten our indoor fishes either. The bigger Junior Section shows just how much activity there is by younger people and there's plenty of other news to keep you interested — as long as we get it in the right order and on the right page!

Dick Mills, Editor, FishWorld

Contributions for the next issue should be in hand no later than July 25th 1997.
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Subscription Department —
FISHWORLD MAGAZINE, 22 Flansled Avenue, Wembley, Middlesex HA9 6DL
(4 Quarterly Issues Mar., June, Sept., Dec.) £5.00 including P & P.
Overseas Subscription £15.00 includes P & P.

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Typeset and printed by Haywards by design, 16 Beauford Avenue, Ashford, Middlesex TW25 2SF Tel 0912 745891

CONTENTS

Show Dates.....	IFC
Editorial.....	3
Painted Fish.....	4
Letters.....	6
There are Ponds.....	9
Roving Reporter.....	11
Plants in Garden Pond.....	15
Three Cichlids.....	17
H ₂ O.....	18
Pump up the Action.....	19
JUNIOR FISHKEEPERS.....	21
Pond Filter Maintenance.....	30
Have You Read?.....	31
Tradewinds.....	32
Corydoras tretifia.....	34
Koi.....	35
Thinking of a Pond?.....	36
Memoirs.....	38
Show Plants.....	39
Planting Goldfish Aquarium.....	42
Ask Dr. Ford.....	47

PAINTED FISH?

What is a 'painted' fish?

A new trend in fishkeeping has emerged in recent years, to the detriment of the fish themselves! This is the 'painting' of a number of commonly kept aquarium fishes, specifically tropical freshwater species. The term 'painted' has been shown to be misleading through laboratory studies on 'painted' glassfish (*Channa sp.*). These studies were conducted by Dr. Peter Burgess, Stan McMahon and Dr. Roy Moore of the Fish Research Unit of Plymouth Polytechnic (McMahon *et al.*, 1991). The studies showed that the dyes used to 'paint' onto the fishes' skin occurred within the internal tissues, suggesting that the dyes were in fact injected into the fish. This theory has subsequently been confirmed with photographic evidence showing the injection procedure.

Which are the most commonly 'painted' species?
There are a number of species subjected to this unfortunate practice, particularly albino varieties and species which are naturally semi-transparent over parts of their body. Albino varieties include *Corydoras* Catfish, Tiger Barbs (*Capoeta tetrazona*), and the freshwater 'Sharks' *Epiplatys bichir* sp. formerly 'labos', these being coloured with either red or blue dyes. Semi-transparent species which have been coloured include *Panglossia* Catfish, Gloss Catfish (*Kribiaopterus bicirrhis*), and especially the Glassfish (family *Channidae*). The names given to dyed glassfish include 'disco fish' and 'painted glassfish' and the 'day glow' dye is generally either yellow, orange, red, purple, green or blue.

Health risks for the fish
The practice of injecting dyes into a fish causes many problems for the health of the animal. The problems come with varying degrees of severity, including the confusion of the unwitting aquarist who thinks the colours are natural, and when noticing them fade with time, becomes concerned with the

fishes' health. This concern may well be expressed in the provision of inappropriate medication which may have an adverse effect on the fish in question. One side effect of the dye injection procedure is the increased occurrence of a virus disease known as lymphocystis. Investigation by McMahon *et al.* (1991) and unpublished results revealed a high occurrence of lymphocystis in 'painted' glassfishes based on a survey of 'painted' glassfishes obtained from aquarium retail outlets around England. Three hundred 'painted' and one hundred uncoloured glassfishes were visually examined and the white characteristic growths were then examined under an electron microscope confirming the presence of lymphocystis-like virus particles. Over 40% of the dyed animals were found to be infected with the lymphocystis disease compared with less than 10% of the uncoloured animals.

Can you do anything about it?
The dye injection process inevitably carries the risk of introducing other infectious diseases into fish. The fishes' skin acts as a defense system against invasion by pathogens. However when this natural barrier is punctured by a needle, the pathogens are capable of gaining entry. The use of disinfectants and antibiotics may help reduce the chances of infection; whether such treatments are applied during the injection procedure is not known. It is thought that over 50% of fish which have been injected with dyes, die before reaching the retailer through either shock or infection, and a further 25% suffer with infections such as lymphocystis after they arrive in your home aquarium. This ill advised practice is unacceptable and can only be prevented from continuing if informed people refuse to purchase such fish if seen for sale in your local aquatic retailer. *J.T. Bell*

References:
Burgess, P. (1995). Painted Fish Contaminated with Lymphocystis. *Significance* McMahon, J., Burgess, P. & Moore, R. (1991). A large problem with painted glassfish. *Aquarist and Pondkeeper*, 14:15.

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LETTERS

Dear Sir,

I would like to reply to the letter sent by Mr. Sell, then Chairman of West Cornwall Fishkeepers (see FishWorld March 1997) with regard to his complaint about not receiving video talks on two separate occasions.

The first occasion was for viewing in September 1994 and two videos were sent but only one arrived, Mr. Williams, who was Secretary at the time, rang me and asked about the second video. I informed him that it had been sent but that one must have been lost by the Post Office, but not to worry, if he would let me know when his Society wished to view another tape I would send it to him immediately and, as of now, I am still awaiting a reply.

The second occasion was in September 1996 and was due to be shown one week after the F.B.A.S. Assembly meeting. As you are all aware I was not at the September Assembly due to my caravan breaking its axle and I was due to go on holiday on the continent the following week with the caravan. Due to the rush to get my caravan repaired the sending of the video to West Cornwall Fishkeepers was overlooked, although when I checked my booking diary I tried to get it there for the meeting but failed by one day as it arrived the day after their meeting. I was made aware of the problem via a curt letter from Mr. Sell with various demands which I will not go into here. I replied to his letter on the 10th of October 1996 apologising for the lateness of the video and received another curt reply dated 20th October 1996.

As of now I have not received further communication from anyone at West Cornwall Fishkeepers with regard to the videos I am prepared to send free of charge.

Colin Pannell Tape/Slide Officer
for the F.B.A.S.

Dear Sir,

As many Societies know to their members and visitors benefit, the F.B.A.S. distributes exclusive support from the aquatic Trade for Society Shows etc. We would remind Societies one important qualifying condition in order to receive such support.

Companies donating the generous support also provide, Show Schedule size, ready to use advertising material, freely available from the address below which Societies MUST include in their Show Schedules — this is a condition which the Federation agreed to in original consultation with Companies when obtaining Trade support for Shows.

In turn, the Officer issuing the actual Show support materials must receive from Societies,

Three copies of the final Show Schedule including these advertisements five weeks before the event occurs.

Sending a 'normal' Schedule (or even last year's) plus separate photocopies of the advertising material will not be acceptable and Show support material will not be sent. The Federation has a duty to fulfil its obligations to the Trade in seeing that distribution, reception and use of their generous support is not abused.

Paul Corbett, The Orchard,
Gatcombe, Isle of Wight PO30 3EF

Dear Sir,

York & District Aquarists Society would like to hear from any other Societies interested in exchanging Newsletters. We, at present, exchange with Ryedale A.S. and our Newsletter Editor Ivan Mulla sends copies to the Liverpool area.

Anyone interested in an exchange please contact:

Ivan Mulla,
126 Broadway, Fulford, York YO1 4JZ
or myself at
6 Bowes Avenue, Heworth, York YO3 DUX
(tel. 01904 414272)

Alan Holmes, Secretary,
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THERE ARE PONDS, AND THERE ARE PONDS

In the beginning, ponds were living ladders on one hand and defence mechanisms on the other. Fortunately today, we do not need either and interest with water-filled holes is much less practical and much more aesthetic.

With the increase in the number of Garden Centres having an associated aquatic section, visitors can come away with plenty of ideas for a pond in the garden which, in the absence of real knowledge, may actually not be practicable when it comes to fulfilling them — anything from a modest-sized, preformed pond with aquatic plants and fountains to full-scale wall-to-wall water containing Koi; other choices may be a water feature without fish at all, or perhaps a wildlife pond.

Of course, everything is ultimately possible but, in fishkeeping, not always at the same time and compromises must be made with the result that nearly every final outcome is usually disappointing. Before installing a pond, do take time to work out just what you want it to do for you; only by understanding how the pond works (no matter what its format) can you hope to get long-term success, and enjoyment from it.

The Nature Pond

Building a nature pond has its own rewards but it should be pointed out that converting such a pond for fish use at a later date isn't always possible.

By definition, nature ponds are designed for natural wildlife and are constructed for this purpose in mind. As the wildlife using the pond will be seasonal, it need not be built to support aquatic life through the rigours of the winter, nor have a filtration system, as a fish-containing pond has to be. In order for the wildlife to be able to use the pond certain design

principles need to be included — shallow water areas, escape and entrance ramps for amphibians, surrounding shrubs, or sheltering low plants, for sanctuaries for animals getting to and from the pond without fear of predation by birds.

Re-assessing these features from a fish-culturing point of view, it will quickly become apparent that the water temperature (and overall conditions too) will not remain stable for long enough to avail fishes of a stress-free environment — being too hot in summer and too cold (almost solid ice) in winter. Again, the siting on the nature pond is often in a more secluded part of the garden and probably too shady for decorative aquatic plants to really flourish. Siting a nature pond near to a vegetated patch could be very productive in cutting down insect damage to your edibles — frogs from the pond will soon devour any damage-making aphids!

Everyman's Fish Pond

In general, this is what everyone thinks they mean by a pond. The water's edge is disguised by flowering marginal plants, Water lilies adorn the surface and occasionally, with just the gentlest of sounds, a fish may break the surface of the water; nearby a colourful dragonfly or damselfly flits from plant to plant whilst the trickling sound from the cascade or fountain soothes away all daily stress.

Creating this vision requires careful planning. The pond must be sited correctly so that the aquatic plants receive their correct amount of sunshine; trees (with their shade, dropping leaves and invasive roots) are all enemies of the pond. Remember to allow space for external filtration systems (using the rockery made from the dug out earth is generally the rule,

There are Ponds, and there are Ponds

(continued)

or else sink the system in the ground alongside the pond, and cover it with decking to form a patio, or sitting area). There will also be the need to supply electricity (mains or low voltage) for the pump, fountain or pondside lighting. The water depth should be of such dimensions that the overall volume of water offers stable conditions (the bigger the better); there should be both deep and reasonably shallow parts of the pond; shelves for marginal plants are usually incorporated into the designs of pre-formed ponds and should be planned for when digging out your own design. Be sure that the design, and the siting, of the pond is right for you: it shouldn't overpower the rest of the garden but, on the other hand, it must be viewable from all the right places. Using a hosepipe laid out in various designs and places, then viewed from within the house (including upstairs) will help you to arrive at the right decision.

The Raised Pond

The contents of this pond will be much the same as for the previously-described 'in-ground' pond but it does have distinct advantages. First there is no back-breaking hole to be dug — just a few back-breaking bricks and cement to be carried! Real advantages include a real sense of safety both for children and for the infirm, a wet, slippery in-ground pond's surround can be very treacherous (accidents in raised ponds are few and far between). Again for the infirm, pond maintenance is so much easier with a raised pond; there is no bending down over water and, if seats are incorporated into the pond wall, much of the maintenance can be carried out sitting down — now there's an incentive! Extending on this theme, any 'electrics' or hardware could be concealed within the 'seats'. Siting a raised pond on a patio with its back

against a wall can be very advantageous if the back wall just happens to be shared with, say, the garage — all the filtration equipment can be placed in the garage (for easy servicing convenience) with connections to the pond made directly through the shared wall.

To make a raised pond, all that is needed is a brick box lined with a pond liner. An alternative method, is the use of interlocking 'logs' to form the box which is then lined in the usual way; a bonus here, is that it can be dismantled when you move house and taken with you! Secondly, such ponds come in various sizes, ideal for even the smallest garden or patio area, the latter being more suited as a water feature (with perhaps a single miniature water-lily) than for long-term fish keeping. During winter, the actual water temperature in a raised pond can fall below that of an in-ground pond, unless steps to insulate it are taken during construction.

A compromise design is the semi-raised pond where, for instance, one face of the pond is exposed through a vertical face such as a wall (even with a window incorporated into it) proves an ideal way of installing a pond on sloping land; raised ponds can be arranged in tiers and connected (in water terms) by falling cascades or direct waterfalls overspilling into each other.

The Koi Pond

A pond for Koi is a specialist subject and one, as Koi keepers will point out, or to be entered into lightly. Koi make different demands on their pond design than do Goldfish or smaller ornamentals. It is recommended that the minimum depth of the pond should be in excess of 1.5 metres (as opposed to the more normal 45-75cms depth of the Goldfish pond). Because Koi are hearty eaters two things become evident — not

There are Ponds, and there are Ponds

(continued)

many plants survive in the pond, and there's a proportionate amount of waste products to contend with too! As a result, the water becomes very polluted and depends heavily on the efficiency of the pond's mandatory filtration system to keep conditions within safe limits. It is not unusual for the separate filtration system to occupy a third of the area occupied by the main pond. During construction, it is normal for bottom drains and side 'ports' to be built into the base and walls of the pond for efficient cleaning and filtering to occur. Erecting a pergola type of covering over the pond will bring some relief from direct

sun during summer, and also prevent the pond being spotted by herons.

From the foregoing, it can now be appreciated that very careful planning is needed for any type of pond if it is to succeed to your expectations. Most manufacturers of pond materials and associated equipment offer well-stocked catalogues with good advice sections; draw up a list of your needs and also a plan of where you intend to install it. A visit to a specialist water garden centre will pay dividends as knowledgeable staff can go through your plans with you and advise on all aspects of your dream pond. The rest is up to you.

THE ROVING REPORTER

A Journey to India supplemental

Since my last article I have received a letter from Mr. Kumar, so my apprehensions regarding the fate of Southern India Aquarists were unfounded. Mr. Kumar had replied to my letter requesting more information on various questions that had occurred to me when writing my article and some of the questions put to me by readers.

The most widely kept fish in India was the Arowana, like the Chinese this fish is kept for luck. I asked for more information on the predators plaguing the fish farms and later realised that this was a little naive on my part in thinking that the information that I had requested would be easy to come by, because book shops and libraries are not so commonplace in India as in the UK.

In saying that, Mr. Kumar states in his letter that the bird problem is caused by Herons and Kingfishers, these are particularly prevalent in the early morning; the latter being able to wriggle through the bird netting. The problem with the Frogs and Snakes may be a little more complex than I

had suggested in that perhaps these particular predators may themselves be harvested and exported but it seems that the export of these creatures is restricted. Mr. Kumar has asked if any of our readers have any advice on how to curtail the Snake, Frog and Crab problem. If you feel that you could help, please write into the editor.

On the problem of Snakes, there is a little more information; On the fish farm they kill by hand between 300-400 snakes a year. These are being 2' and 8' in length and are Water Snakes. Mr. Kumar thinks that they are not poisonous.

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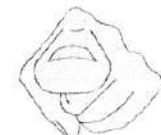
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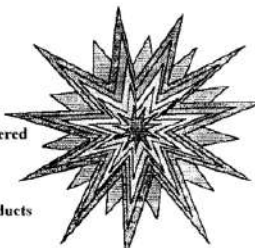
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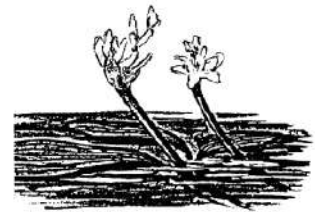
PLANTS IN THE GARDEN POND

by Malcolm Goss

My pond has Goldfish only, as I feel to keep Kei in their best condition your pond must be of a large size. The Goldfish I keep are of many colours and give an equal amount of beauty as their larger brothers. The pond I have was constructed of rigid fibreglass and has only half its depth below the surface of the ground. I have a low brick wall approximately 300mm high following the contour of the pond 100/150mm away from the pond's edge. This area is filled with earth and has become ideal for growing plants. As well as making the pond more visually attractive it gives the appearance the pond is larger than it is.

With Spring on its way a form of blanket weed is often seen growing around the wall of your pond. I do not at this time cut this back as its presence gives a biological balance to the pond and keeps the water clear. But as Spring sets in with a few more daylight hours this weed may now start to spread rapidly and seriously restrict the swimming space of the fish. I now pull this out in large amounts, but taking care to leave a reasonable amount on the side walls of the pond. This is an ideal pond for our fish to spawn in as summer approaches, but you may well have to cut the blanket weed back again over a period of time.

If your pond last year had the plant, *Elodea densa* or *Myriophyllum aquaticum* growing, then it will have died back over the winter months. It is now in the Spring that it will take hold, and so maintain the balance in your pond even though we have cut back the blanket weed. If these plants were not present last year, now is a good time to purchase some plant, approximately 10 to 20 cuttings. Because they are cuttings I find they will thrive by just floating them on the surface.



Aponogon distachyos

During the Summer months they will establish themselves and will often self-root, but once again the growth may become so rapid that this plant will also need cutting back. This depends on the quality of our summer and the position of the pond in the garden. One may be tempted in growing one of the floating plants, Duck Weed (*Lemna minor*) *Riccia fluitans* or *Azolla filiculoides*, a floating plant that becomes bright red in natural sunlight. My advice is **don't**, as they grow super-rapid and in a couple of weeks from just enough to cover your hand will evolve enough to completely cover your pond.

Some garden centres do sell the large floating plants, Water Hyacinth (*Eichhornia crassipes*) and Water Lettuce (*Pistia stratiotes*), but even these are TROPICAL and even if they survive the Summer they will surely die through our winters.

One of the nicer, smaller plants is the coldwater Aponogon (*Aponogon distachyos*) with its elongated bright green leaves laying on the surface of the water. In flowers in summer, these being white in colour and delicate in appearance. I grow mine in ice cream tubs filled with a mixture of loam and gravel on a bed of clay. Place your tub on the shallow shelf of your pond in a sunny position.

15

PLANTS IN THE GARDEN POND

(continued)



Caltha palustris

Water Marigold (*Caltha palustris*) with their bright yellow flowers, just like the gardeners French Marigolds bloom in spring. This will happen if you cut all the old leaves off during winter. These plants need to be in a planting basket of 200mm square filled with loam and placed on your pond shelf for marginal plants. The flowers will die off after a few weeks to be replaced by large dark green leaves growing clear of the water surface. If you cut these leaves back down to the water level (don't be afraid to be harsh) they will regrow and flower a second time during August.

Water Lilies (*Nymphaea*) are one of the oldest plants to be cultivated and Pre-ice age remains have been found in Europe. The Water Lily was introduced to Egypt from India, its native home in 2,500 B.C. The tubers are rich in sugar and starch and are a food like potatoes. The seeds were ground down by the Egyptians into a powder, mixed with flour, milk and water to make bread. Modern cultivated Lilies are one of the loveliest of aquatic plants, truly exotic, in looks and colour.

N. marliacea (bright red), *N. chromata* (soft yellow), *N. odorata* (creamy white) require some space to grow, but for those with the smaller pond try *Nymphaea pygmaea* the smallest of Water Lilies.

In autumn I remove my plants, cut back all the old stems, they may well have large root growth too, these can be divided with a spade to cut large tubers in half. I melt a rock or brick to the root and return it to the pond. I do not grow my Lilies in baskets (after a friend's advice) and for me they grow better than before. Don't forget to cut off dying flowers, just like you would your garden Roses and other flower plants. This will keep the Lilies blooming right through the summer and well into autumn.

However, this may well not happen if you either have a fountain running or a fast flowing waterfall. Lilies like still water. I do have a turnover of water, but just a trickle. Just one more job to remember, cut off and pull out all those dead leaves before frost and ice come. Dead vegetation will kill your fish during Winter when rotting leaves give off poisonous gases.

Finally in the area I have filled with earth between the low brick wall and the pond, I grow border plants from Parsies to White and Blue Alyssum, completing my pond of colour.



Nymphaea 'Helvola'

16

THREE CICHLIDS

Terry Waller looks at three old favourites

I want to talk about three fishes that are similar in habit, reputation and popularity (or lack of it!)

Many years ago, the only species of the larger cichlids available in the hobby were the Oscar, Jack Dempsey, Severum, Festivum, Firemouth, Blue Acara and Convict. These were always available in the few shops around but when purchased always came with a "Health Warning" due to their alleged pugnacity, disruptive habits on the tank's set up and general bad behaviour towards their tankmates. I'm afraid a lot of this is true, if we are silly enough to introduce these fishes into small, nicely-planted tanks with lots of Tetras. If, however, we bring them into an environment of rocks, more rocks, plastic plants and bigger fishes such as Barbs, Rasboras, Silver Dollars and the like we will have fewer problems as the fish are tough as old boots, easy to feed, will breed and, in many cases, raise their own fry. It's the same old story — read about what you intend to buy BEFORE you purchase the fish.... easy isn't it?

We need, for a population of these fish a larger than usual aquarium, say a 48 x 15 x 18 rather than a 24 x 15 x 12 — bigger is better still.

The Firemouth, Blue Acara and Convict are all excellent examples of medium to large Cichlids. A lot can be learned about fish behaviour and breeding by observing these species.

The Firemouth

Known for generations as *Cichlasoma meeki*, the Firemouth now finds itself *Herichthys meeki* through no fault of its own. This is a Central American Cichlid found in the Yucatan

Peninsula growing to 6" in the wild but more likely to be 4" or 4½" in the aquarium.

Here we have a beautiful fish both in colouration and shape; greyish overall but with a brilliant scarlet throat and breast. Fintage that is full and exaggerated with lots of iridescent blues and greens, tapering off to a needle-fin point on the males (more rounded on the female). When aroused, the fish will flare its gill covers in a show of mock defiance against other males but this rarely leads to anything else but show.

These are active fish that do not hide away. To sex them, take a good look at the fin shape — dorsal and anal particularly are tapered in males but rounded in females. The red in the females is less intense, these fish can be reliably sexed even when quite young, six months for example.

What I find particularly pleasing with this fish is that even when very young they display the redness for which they are named.

The Blue Acara

Formerly *Aequidens latifrons*, the now correct name is *A. pulcher*. This gem of a fish comes from the northern part of South America — Venezuela and Colombia. They grow a bit bigger than the Firemouth but are less aggressive in the aquarium. 7" is a good size but 5" to 6" is more likely. This is another striking fish being greyish-blue but overlaid with masses of iridescent blue, green and maroon sparkles. These increase and intensify as the fish ages or becomes excited.

17

Three Cichlids

A most peaceful fish for its size, it will however hold its own against many larger, more belligerent fishes. Colour-wise there is not much difference between the sexes so we must rely on fin-shape but this is not quite as easy as with the Firemouth. Care must also be taken when buying this fish; make sure you are getting Blue Acaras and not another very similar fish, *A. nivalis*, which is often substituted when Blue Acaras are not available. This is an extremely aggressive fish and grows into a huge monster. It is not called the Green Terror for nothing! One drawback with the Blue Acara is its susceptibility to White Spot — keep a sharp look out for the symptoms.

All three of these species nevertheless give us a wonderful insight into fish behaviour. They are intelligent enough to select their mate, intelligent enough to choose and prepare spawning sites and intelligent enough to defend their young and eggs (just try putting your fingers near an egg collection with a Convict male around!). They also give the impression, at times, that they are studying us from their side of the glass!

The Convict

This fish comes in two forms — the traditional dark-grey fish with numerous vertical black bars (hence the name) and a semi-albino version. Both are aggressive but neither warrant the reputation they have been given. Once again keep them with bigger fishes and they behave. *Cichlasoma nigrofasciatum* as it was called is now *Hemichthys nigrofasciatus*. The sad fact about Convicts is that no-one wants them — they just don't stop breeding and supply always outweighs demand. Someone once said that if you buy a pair, taken them home in separate bags or you will have a brood before you get there!

H₂O

by Malcolm Goss

Water condition is the prime factor for keeping our large fish. It is their total world. Well oxygenated water will always be a must.

With privatisation of water companies, and water becoming a valid earner for the shareholders, many houses are now having water meters installed, and new buildings are having one fitted automatically.

One may therefore be giving more thought to the collection and storage of rain-water. Many experienced aquarists always use rain-water for their spawning tanks and use nothing else. This may be alright for those who

keep *Corydoras*, but not so easy for the keepers of the bigger fish, with their 200+ gallon tanks — a 20% water change is a lot of water!

With this in mind, I would appreciate any Members' thoughts on the matter of water conservation (collection and storage) for the aquarium.

I am hoping, through the F.B.A.S. Members and FishWorld magazine to make this a national enquiry. Provided there is sufficient response from aquarists around the country the results will be published.

(continued)

PUMP UP THE ACTION!

David Brown advises how to make the correct choice when buying a new one or, it needs be, breathes life into your existing pump.

Normal pond filtration systems need to turn over the pond up to once every two hours; so, work out the capacity of your pond, divide it by two and this is the water flow rate your pump needs to produce each hour IN THE PLACE YOU PUT IT. (Note: the arithmetic works the same for both gallons and litres, just remember to look for the appropriate gallons/hour or litres/hour rate on the pump specification).

If you are pumping water through an external filter, or over a waterfall, then how far (and how high) is it from the pond? These factors make very significant differences to the performance of the pump as the further from the pump the more flow rate you lose through simple friction: the smaller diameter the pipe, the greater the friction and more loss. The distance between the water surface of the pond (NOT where the pump sits if it is a submersible) and the top of the waterfall or filter input is, normally expressed as feet (or metres) of static 'head'. So, if your pond water surface is one foot below ground level and you are feeding a waterfall four feet above ground level then your pumping head is five feet.

Expect to find submersible (mainly or low voltage) rather cheaper than surface models to buy. Running costs in general will be similar for the same amount of water but will be directly related to the volume of water they move. You WILL notice the difference in your electricity bill when you install a pond pump whatever they tell you! But just compare this cost to the price of a pint or two of beer, or glasses of wine, and balance that against the huge enjoyment value, and satisfaction, you get from your pond all year round. Most of us think it well worthwhile.

Working it out

Here is an example based using a submersible pump for a pond 10 x 10 x 2 feet deep. (The sums are the same for a surface pump).

Pond capacity = 200 cubic feet (10 x 10 x 2). Multiply by 6 which gives, say, 1,200 gallons. For filtration and general pond health the pump should turn over 600 gallons per hour (1,200 divided by 2).
Water Pump: 300 x 300 x 60cms = 5,400,000ccs = 5,400 litres. Pump rate = 2,700 litres per hour. The filter is 18 feet from the pond and the pipework is 3/4". The amount of pipework loses the equivalent of 5' head of water, so this needs to be included in the sum. The top of the filter is 5' above the water level in the pond; another 5' of 'head' to consider.

Water flow required is 600 gallons per hour = 10 gallons a minute.
Total head of water is 5' (pipework losses) plus 5' (height) = 10 feet.
The pump must produce AT LEAST 10 gallons a minute at a 10' head. (The ideal performance, but one that is likely to be diminished further — once the water flow has to force its way through dirty filter media).

Packaging information for suitable-sized pumps gave 12 gallons per minute at a 10' head, just about enough, and 17 gallons per hour (more than necessary and more costly to run) — no guessing necessary to choose the right one!

The particular pump chosen, by the way, is generally quoted as producing 1,500 gallons per hour or 25 gallons per minute. This figure, of course, just refers to the amount of water coming out of the end of the pump when it is bench-tested and not connected to anything else. So, the 1500 number is a bit of a pointless number in itself; similarly, it's equally pointless asking your dealer for a pump which produces 10 gallons per minute if you don't tell him as to how the pump is to be used. If he doesn't know what you are talking about then go to a different dealer — one who understands his trade, and his ponds.

18

19

PUMP UP THE ACTION

(continued)

EXISTING PUMP OWNERS START HERE

The humble submersible is more than just a pump. It's the invisible engine that drives the life support of your pond and for your fish. Unfortunately, 'out of sight' becomes 'out of mind' but it is vital that you spend the time to check it over.

If you turned off your circulation system over the winter (or if you didn't for that matter), there are a few things you should do with your submersible NOW.

If you DID shut down your system and remove the pump during winter then you should have stored it so that the motor seal stayed wet. Somewhere frost-free — in a bucket with a few inches of water in the bottom perhaps? If you left it in the pond, then the following comments still apply (but PLEASE don't drag the thing out of the pond by the cable, use the handle or lift it by the fountain head).

First UNPLUG THE PUMP for safety's sake, remove the outlet hose(s) (or fountain head and 'T' piece). Look inside the intake. Are there any obvious bits of rubbish in view (just waiting to jam the motor), twigs, grit, clumps of weed twisted around the impeller?

After REALLY MAKING SURE THE PUMP IS UNPLUGGED, use your finger to turn the impeller — you can usually reach the edge of it. Does it move freely, without any stickiness or friction? Even the new ceramic shafts sometimes allow the motor shaft to 'freeze' onto the seal, especially if it has been left dry for a long while, so when you start the pump again the sealing ring can get torn or damaged. If it sticks, get rid of it fast — it'll only break down when you least expect it! Give the pump body a good wash out, it's simple to put your garden hose in through the outlet and flush out the

last grains of sand, or anything else that may be lodged above the impeller out of sight. Some pumps can be taken apart by a simple bayonet-type twisting action, in order to get to the impeller chamber, this makes things a lot more easy — and don't forget to de-slime the magnet from accumulations of food proteins!

If you use a three-pin plug on the business end, this needs checking out too. Take off the top and make sure all the connections are all tight (and dry!) and put it back together again with a spray of silicone or WD40. Give some serious thought to permanently wiring the pump into a dedicated safety, and switchable, point with its own safety trip and fuse — better than any plug and socket arrangement.

Check the cable — if you can, leave it in some warm water, or lay in the warm sun(!) for an hour or two until it is nice and flexible then look at every inch of its length. Are there any tiny cuts in the cover? Any signs of abrasions or perishing? Even the tiniest break in the insulation means it's past the safety 'sell-by' date. If in doubt, get it checked by an aquatic dealer or a qualified electrician. Make sure he knows that you intend to leave the cable in water day and night for the next 6 or 8 months. If you have the slightest doubt, throw the pump away and buy a new one.

Speak to your electrician again and make sure you fitted a PROPER safety device — not just a 'pop-out' fuse. You need a good quality RCD or Residual Current Device (sometimes called an RCCB). Electricity and water don't mix at all well and, quite simply, will kill you, your children, pets and fish without a moment's hesitation. A new pump is not cheap but try to put the financial outlay into perspective — how much did you pay for the last sizeable KoI you bought? How much is your family's safety worth?



It is with great pleasure that I announce, to the membership, that TETRA have added their generous support to your Association. We are quietly optimistic that other Trade and National Societies will volunteer their support to your Association and we hope to bring you more news on this front in future issues of the Junior Section of FISHWORLD.

I am very encouraged by your response to our introductory mailshot. For those of you, however, who did not join up first time around, here is another opportunity for you to join your National Junior Fishkeepers Association, by completing the application form and sending it in, together with a stamped and Self-addressed Envelope, to the Membership Officer or to me with your Competition Entry.

On the Competition front, at time of writing I have received quite a number of entries already and look forward to receiving lots more by the closing date of 17th May. Some of you, unfortunately didn't spot NATIONAL JUNIOR FISHKEEPERS ASSOCIATION hiding away in the grid. On the other hand, three of you picked up a slight glitch in the grid and "went round the corner" for GUPPY and HAGEN. I, obviously have to keep my eyes peeled, well done! To get away from the well worn WORDSEARCH, I've posed a LOGIC PROBLEM for you this quarter, and should some of our younger members need a bit of help from an older, I won't tell if you don't. Good Luck!

By the time you read this, the Open Show season will be well on its way. If you don't belong to a local Club or Society, and have never been to an Open Show (or even knew they existed), I would urge you to try and get along to one in your neighbourhood. You will get the opportunity to see lots of top quality fish and, if you're polite, to talk to some of the real experts in fishkeeping. By the way, if you think it's just adults who run Open Shows, why not take a trip out, on Sunday 29th June, and see how those incredible youngsters at Seascope Junior Fishkeepers put on their Open Show. (Note to Aniket Sardana, I believe your nearest Open show this year might be Walthamstow which is also on Sunday 29th June).

On the Junior show scene, we recognise that it is difficult for many of you to arrange travel the length and breadth of the country just to take your fish out for a One Day Show. Whilst it is our intention, therefore, to have a Fish Show at FISHWORLD '97 in Dunstable on Sunday 31st August, for you it will be under a different format than you would usually find at Society Open shows, so bring along your fish for judging. There will be a full NJFA Fish Show on Sunday 2nd November at the Federation of British Aquatic Societies' Supreme Weekend of Fishkeeping at Weston-Super-Mare.

Now for a couple of short messages. Thank you to Emma Louise Woodruff from Blackburn for sending your drawing of your Guppy "Flash". Michelle Maley from Glasgow, thank you for your "Fishing For Words — I" entry, but you didn't fill in your Membership Application Form — you can complete the form in this issue and send it back to us, hopefully with your LOGIC PROBLEM entry.

John Pall — General Secretary
National Junior Fishkeeping Association
44 Lakewood Drive
Wigmore, Gillingham
KENT ME8 0NS

We are grateful to First Pumps for assistance in the production of this article.

21

NATIONAL JUNIOR FISHKEEPERS ASSOCIATION

If you would like to join the National Junior Fishkeepers Association, and are aged between 8 and 16 inclusive, then please fill in this Form and return it, together with a Stamped Addressed envelope to:

The Membership Officer, NJFA
22 Flamsted Avenue, Wembley, Middlesex HA9 6DL

Surname: _____ Forenames: _____

Address: _____

County: _____ Postcode: _____ Date of Birth: _____

I am/ I have been/ I have not been a member of a local Aquarist Society or Specialist Fish Society

What is the name of the Society? _____

My Parent/Guardian is/ has been/ has not been a member of a local Aquarist Society or Specialist Fish Society

What is the name of the Society? _____

Would you like information on: Local Societies _____ Yes/No

National Specialists _____ Yes/No

What species, or genera, of fish are you interested in: _____

Is your fishkeeping in: Aquaria: _____ Ponds: _____ Both: _____

Which other associated aspects of fishkeeping interest you? _____

Water Lilies: Filtration: Plants: Fish Shows:

Fish Exhibitions: Other (please specify): _____

Signature of Parent or Guardian: _____ Date: _____

(delete as appropriate)

FOR OFFICIAL USE

Date Received	Membership No.

HATCHING BRINE SHRIMP

When aquarists begin to breed fish, they soon find that five baby brine shrimp are required to raise the fry. Crushed flake food can be used, but best growth and health are attained when live baby brine shrimp are added. Brine shrimp eggs are easy to store and readily available, but hatching them is a little more difficult. The manufactured hatchery can be expensive, glass jars and old milk bottles etc. have been tried, as have old 2 litre pop bottles, all with a certain amount of success. Here's an idea, however, which I heard about when we lived in the U.S.A., and that is a plastic milk bottle. The larger the better, so a 6 pint bought from your local Supermarket is best, although a 4 litre may still be okay. Before going on, I should say that our younger Juniors must get the help of an older member of the family to help with the work as it involves the use of a pair of scissors or a knife and some electrical connections.

Screw on the plastic cap tightly, invert the bottle, and cut a square out of the bottom, near to the handle end, just large enough to get the "ingredients" into the bottle. Another advantage of plastic milk bottles is that they all come with a hollow handle which is perfect for holding an airline in place, without weights or glue. Simply run the airline through the hole and down the handle until it shows at the neck, which of course is the lowest point in the inverted bottle. The use of an airstone on the end is optional, depending upon the pressure from your air supply.

Probably the biggest problem in hatching shrimp, is keeping the water sufficiently warm. If you have the use of a heated fish room, then fine, you have no problem. Others suggest placing the hatchery in a heated aquarium, but the use of a perfectly good aquarium for something other than keeping or breeding fish is a bit of a waste, not only that, they cost money! On the other hand, a styrofoam box, used for transporting fish, which you may already have or can obtain from your local aquatic outlet, is a very good cheap alternative. Cut a hole in one end of the box, towards the bottom, to take a bayonet type light bulb fitting with a screw cap. Have your Parent/Guardian fix this up for you, particularly the electric, so that a light bulb can be sited on the inside of the box and the electric lead going away to a nearby source with a 3-amp fused plug. The inverted milk bottles are placed inside the styrofoam box at the opposite end to the light bulb (an odd piece of styrofoam across from side to side could be used as a wedge). If you intend to leave the box open, then you may need a 75 or 100 watt bulb (but check the maximum wattage shown on the bayonet holder), which should produce about 100°F water temperature with the shrimp eggs hatching in about 36 hours. If you can replace the lid on the styrofoam box, however, a 25 watt bulb should be sufficient to keep the water warm enough.

The next problem is to separate the shrimp from the shells. To do this, make a hole in the styrofoam box top that is big enough for the neck and handle to fit, but not so big that the entire bottle falls through. Leave the light on in the box, pull the airline for that bottle out of your air source, and set the bottle in its hole on top of the styrofoam lid. Put a dark paper bag over the bottle to shut out the room light, so the shrimp will collect at the neck of the bottle, being attracted to the light shining in that area. The shells, which will float to the surface, are dark brown; the shrimp themselves are pinkish orange and are attracted to the light at the bottom. The airline tubing, still through the handle of the bottle, is perfectly located to be used as a siphon. Siphon the brine shrimp through a coffee filter, a brine shrimp net or similar and rinse.

What should be used as a hatching solution? Table salt is not always successful, artificial sea salt from your local dealer is an expensive option, however, the method suggested was 4 to 5 heaped tablespoons of ordinary rock salt. Brine Shrimp Eggs were added at the rate of half to three quarters of a tablespoon. When adding the rock salt, don't worry about crushing it into small granules; salt is quite soluble in water and will dissolve on its own in a short time. It is interesting to note that the folks in the States used aquarium water to make up their solution, however, I think I would prefer to use fresh water. Fill the bottle as high as possible without overflowing.

The people who told me of this method, of course, stated that as in any aquarium practice, there is no "right" or "wrong" means to the end. The method described worked best for them, and, by passing it on to you I hope you might try it and like it too (let me know how you get on).

23

NATIONAL JUNIOR FISHKEEPERS ASSOCIATION

Thank you for the letters which some of you have sent in. Keep them coming and let's hear from more of you about anything related to fish, we might even publish some fishy howlers providing they're not too high (or low) on the green scale! I believe the Guide & Scout movement has a Pets/Hobby Award Badge — have any of you achieved this, using your fishkeeping hobby and, if so, what did you do?

Heather Beech sent us this prize winning letter from Staffordshire.

I am writing to you to let you know that I would love to join your new club. I have got 9 goldfish (in 4 tanks) and I breed (well cross-breed fish) with my Comet called Goldie, who is very clumsy and my London Shubunkin called Jaws. I named her Jaws because I thought she swam like a shark. I have also got 2 Comets called Fishy and Oscar, 4 Catfish Veilfish called Bert, Pebbles, Rocky and Sheridan. My favourite of my fish is my common Goldfish/Comet called Paddy. I call him a common goldfish/comet because I can't tell which he is. I am a member of The Northern Goldfish and Pondkeepers Society, which is a very good club. I would advise people to join it any day. I would like to become well known in the fish world and I like showing fish.

Heather did include some photographs of her goldfish and a comic strip about Paddy on Show Day. We couldn't, unfortunately, print them well enough for you to see in this section, however, they will be on display at FISHWORLD '97 in Dunstable and at Weston-super-Mare later this year. If you have some photos of your fish, send them in with a short write-up and, if we can't publish them in your Junior Section of FISHWORLD magazine, we'll make a montage of them for Dunstable and Weston.

Talking of Weston, Kerry Graham sends this report from last year's event.

My favourite activity at Weston was the Amazon play and the Seascale Junior Fishkeeping Society tableau. I like the Amazon play because it told us about not damaging the Amazon river. The Amazon is in South America in Brazil. I also learnt about all the fish, such as Piranha, Cardinal Tetra, Angel fish, Discus and Bleeding Heart Tetra. That was really good because I learnt a lot. I also enjoyed all the characters from Seascale Fishkeeping and Trevor. He is the M.C. and he joined in the Amazon play with us Seascale Fishkeepers.

We did our tableau on 40 years of nuclear power. It was really, really cool, we even had real fry. The night before the judging of the tableaus, when we were setting up, we had a disaster. The medal was leaking on the grass of the tableau so we had to put some stones around the edge and tilt it back. I enjoyed helping with the tableau and taking part in the tableau competition. After all that disaster, we came 4th. I would also like to thank everyone that was at Weston for the hard competitions and for the people who invited us. I would also like to thank Chris and Helen Steele for taking me and many other people from Seascale Junior Fishkeeping Society. Thank you everyone. I hope everyone had a really good time, like us.

I love fishkeeping, I love Weston, I love fish.

Thank you Kerry, and the rest of your club, for all the joy and excitement you bring to Weston, and for your report. Thanks also to Jacqueline Bishop who said she enjoyed Weston as well and, in particular, having her face painted to play an Indian in the Amazon play.

24

With the show Season upon us, I have just received this "first fin report".

Hi, I am a comet, a red and blue coldwater fish. My owner, Donald McCartney, calls me Breadcrumbs. He has been a fishkeeper and a member of Seascale Junior Fishkeeping Society for 2 years. I am very special to him.

My story starts back in 1996 when my owner took me, and my friend Birds Eye, to a Table Show. I could see small tanks of fish on either side of me waiting to be judged. My master said that the judges check fish for their colour and condition, as well as size. I thought that the judge would take me out of my tank to measure my length, but he just placed a special ruler in front of the glass and measured my length that way. I didn't win, but got a third prize ticket and my master was very proud of me. At the end of the day I returned home and was placed in the aquarium with my brothers and sisters and told them all about my first fish show.

Four weeks later, and on an old hand at the game, I competed in my second show. I travelled to Seascale School where, after being issued with my entry form, I was again put on display in the coldwater section between two very nice fish. After the judging I was awarded a blue 2nd place card by a nice judge.

All this seems to have been such a long time ago. I have been feeling miserable since Christmas. The lovely shimmer has gone from my scales and I have lost my appetite and I prefer to hide at the bottom of the tank, than show off as I did in the summer. My master is not sure if I am ill or suffering from old age. He fusses about and puts all sorts of medicines in my water. One lot of medicine turned the water a beautiful shade of emerald green. The other week he put six teaspoons of cooking salt in my water. Who knows next time it could be vinegar or even chips. With a name like mine, anything is possible.

Well, I hope not Breadcrumbs. You sound too young yet to be going to that great aquarium in the sky. Besides, I wouldn't want to lose a promising reporter like you after just one story. Let's hope you're back in the swim of things soon!

The next letter comes from, what sounds like, a very busy household.

My name is Annette Johnstone and my two sisters' and I are members of Seascale Junior Fishkeeping Society.

In my tank at home I have 3 albino Corydoras, a pair of Cherry Barbs, a pair of Rosy Barbs, 3 Red-eyed Tetras, 4 small Kribensis and 4 Silver tipped Tetras. I have successfully bred my Cherry Barbs, but I don't know how many will survive, as they're still very small, they've only just hatched. I have tried breeding my Rosy Barbs but without as much success. I think they're too young to breed properly yet.

We have 4 main tanks altogether in our house, but we also have numerous small breeding tanks in lots of different rooms in the house. I have one of the main tanks and a small tank for breeding in my bedroom which both belong to me. There is one main tank, a proper breeding tank and a small tank for breeding in my sister's bedroom and one main tank in the hall. The last big tank is in the living room. In the house between us we have bred Panda Corydoras, Kribensis and Cherry Barbs successfully. We have also bred Swordtails but none of the fry survived.

My favourite fish are Angelfish and we have 3 small black and white Angels in the tank in the hall. I wanted them in my tank but if I had been allowed nobody else would have been able to see them, so I gave in, not very happy. The whole family enjoy fishkeeping and it is a hobby we are likely to pursue.

When your Angels get bigger, perhaps they'll breed for you and you might get some of the fry in your tank Annette. Gail Johnstone also sent me a nice letter, with illustrations about how she set up her tank ready to receive some Guppies, Angels and Corydoras panda.

25

Hilary Porter, also from Seascale, tells of her success at fish breeding.

When I first saw a Killifish, the first thing I noticed was the bright markings on the male, they were called Aphysmenon gardenae. We spawned them in a tank 18" x 10" x 10", there was Java Moss and a spawning mop, made out of wool and polystyrene.

They spawn about every 3 weeks and they rub one another when they are spawning. When you think that they have spawned you just take out the spawning mop and carefully look through it. The eggs are quite big and usually have an eye in them. When you pick them out put them in another tank, they will hatch within 18-21 days. You start feeding them on Brine Shrimp and as they grow feed them on bigger food. I think Killifish are very interesting to keep.

It's good to hear of Junior Fishkeepers attempting, and in these instances successfully, to get their fish to breed, keep up the good work.

Gillian Eccles writes about a problem, common to many fishkeepers.

My favourite fish USED TO BE Red Tailed Sharks, until my brother bought one. After we had put it in the tank, it seemed alright so we left it and it was still alive the day after. We left it and kept feeding the fish then when I tried to put Guppies into my tank the Red Tailed Shark chased it so much, it killed the Guppy. I tried again but it chased and killed the Guppies again. So the next time I tried, I put the red Tail Shark in a tank in a tank and then I put the Guppy in the tank, but the Red Tailed Shark got out and killed it. So I went to tell Chris and Helen Steele and they said to take the temperature down. Since then it has calmed down a bit and I have managed to put a Black Molly and a Zebra Danio in. We think the Red Tailed Shark goes for bright tails not dark tails. At the weekend I am going to try and put some more fish in the tank. I am going to stick to dark small tails. I need to keep the Red Tailed Shark, because it's my brother's, not mine. I am going to try and make it grow because it is not growing well, even though I feed it enough.

Well Gillian, a slightly sad tale. My wife, Liz, keeps her RTBS in with her Botia Lohachata and with my medium sized Barbs and Rasboras. Whilst it does chase the other fish, occasionally, it gives up fairly quickly as they are of equal size and can swim and move just as quick as it can.

Finally, a thought provoking letter, entitled "A Child's Eye View"

At 13, I am one of the oldest of our junior club members and seriously interested in fishkeeping, both as a hobby and as a realistic option for a future career. The interest in Junior fishkeeping has grown over the last 3 years, as people are beginning to realise that we are the fishkeepers of the future. Even though we are being recognised, people are continually underestimating our potential to comprehend the more complex side of fishkeeping, and that we also take an interest in maintenance, water quality etc.

In many of the popular fishkeeping magazines, there are so called "Junior" pages, containing a cartoon, wordsearch, reader pictures and maybe a competition to win something from a top aquatic manufacturer. This is all very well for the younger readers, but we, the older and more able keepers need some information that may come in useful, or some problems experienced by some fellow fishkeepers that may help to deal with difficulties when they arise.

Well, there is much to chew on from, not so much a child but, a young person growing up. I hope you like the Brine Shrimp article, the LOGIC PROBLEM and the letters, I think, are a bit different from what you might find elsewhere. Is there a particular subject that you, or anyone else for that matter, would like covered in your National Junior Fishkeepers Association Section in FISHWORLD?

UNITED KINGDOM JUNIOR CHAMPIONSHIPS — 1

Sponsored by Tetra and Rolf C. Hagen

On the following page is this month's competition. It is based upon a standard LOGIC PROBLEM format. For those of you who are not familiar with this type of puzzle, the chart provided takes into account every possibility to be considered in the solution. First, read the problem and the clues, carefully; then enter in the chart all the information immediately apparent from the clues. As an example, use "X" to show a definite 'no' and a "J" to show a definite 'yes'. This will narrow down the possibilities and might even reveal some new information. So re-read the clues with these new facts in mind to discover further negative or positive relationships. The small grid at the end of the problem is a summary chart for your findings and should be filled in so we can check your results.

When you have completed the problem, detach this page and send it to:

National Junior Fishkeepers Association
U.K. JUNIOR CHAMPIONSHIPS—1
44, Lakeside Drive,
Wigmore, Gillingham
KENT ME8 0NS

Entries must be received by 16th August 1997. The first three correct entries out of the bag will each receive a **HOLDALL, FISH FOOD and MINI PRO POWER HEAD** as extra First Prizes and the next seven correct entries will each get **TUBS OF FISH FOOD**. Winners names, along with a solution, will appear in a future issue of FISHWORLD.

Please complete the following so we know where to send the prize should you be a lucky winner:

SURNAME: _____ CHRISTIAN NAMES: _____

ADDRESS: _____

_____ NJFA MEMBERSHIP NO: _____

COUNTY: _____ POSTCODE: _____ DATE OF BIRTH: _____

If you are not a member of the NJFA, but would like to join, you can send your Membership Application Form in the same envelope, to save postage, and it will be passed onto the Membership Officer.

UNITED KINGDOM JUNIOR CHAMPIONSHIPS - 1

Following local competitions, finalists representing each of the areas brought their fish to the Championship Fish Show. Following judging of the 48 entries, the first six Places were to be awarded Trophies, Cards etc. At the end of the day, however, the results were unfortunately mislaid somewhere between the Show Hall and the Announcer. The Show Secretary could remember that a Pterophyllum scalare owned by a Miss Stella Kees, from KAAS had been placed 6th. Can you help him place the other five Places from the other information he can recall?

CLUES

- The vibrant colour of Tony G's *X. maculatus* ensured a higher place than 5th.
- The fish belonging to Jim T, representing ASAS did not gain as many points as either Linda H's entry or the *M. altispinosa*.
- The *P. reticulata*, not owned by Linda H was placed 4th.
- The *A. spilopterus* representing the USA though not the winner received more points than the FNAS's entry.
- Helen K's fish was placed 3rd. Jeremy P's fish finished one place below that entered by the FNAS's representative.
- The fish entered by a NEFAS owner out-pointed the USA's representative by the narrowest of margins.

	Jeremy P	Jim T	Tony G	Helen K	Linda H	B. arulius	A. spilopterus	P. reticulata	X. maculatus	M. altispinosa	USA	FNAS	TTAA	NEFAS	ASAS
1st															
2nd															
3rd															
4th															
5th															

PLACE	NAME	FISH	AREA

MAIDENHEAD AQUATICS
Fine Aquatic centres throughout the south of England

Everything for the watergarden

<p>Maidenhead Aquatic Centre Bourne End Garden Centre MIDGTON ROAD, BUCKINGHAM Tel: 01295 833000 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>North London Aquatic Centre Country Gardens DAYS LANE, HILL HILL LONDON NW7 4JL Tel: 0181 833 3999 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Southampton Aquatic Centre Country Gardens Centre WINDHETTER RD, BARRACK, EASTLEIGH HANTS RG50 9HG Tel: 01296 656284 FISH, TROPICAL, GOLDFISH, etc.</p>
<p>Iner Fish World Jesse Flowerland NORWOOD LANE, OF BANGOR ROAD SOUTH BELL BUSBY, BIRMINGHAM Tel: 0121 430 3010 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Calchester Aquatic Centre Country Gardens BOSCHER ROAD, A219, CHELSEA WEST SUSSEX BN1 9JG Tel: 01243 774477 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Hanley Aquatic Centre Engleberg Garden Centre READING ROAD HAYLEY ON THAMES, OXFORD, OX4 4JF Tel: Reading 24734 004423 FISH, TROPICAL, GOLDFISH, etc.</p>
<p>Ascot Waterworld Country Gardens Centre COUNTRYPARK ROAD MINDENHAM, SURREY GU20 9EL Tel: 01344 876331 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Morden Waterworld Morden Hall Garden Centre POWELL ROAD, MORDEN MORDEN, SURREY SM4 9JG Tel: 0181 833 3999 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Guildford Aquatic Centre West Horsley Garden Centre POPE ROAD, WEST HORSLEY SURREY GU24 4JL Tel: 01483 828444 FISH, TROPICAL, GOLDFISH, etc.</p>
<p>Aquarium World-Ting Ting Garden Centre BIRKENHEAD ROAD, BIRKENHEAD MERseyside CH43 9JF Tel: 01492 525881 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Chippenfield Aquatic Centre Chippenfield Garden Centre TOWER HILL, CHIPPENFIELD WILTS, WILTSHIRE SN15 7W4 9JL Tel: 01451 834444 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Syon Park Aquatic Centre Syon Park Garden Centre 100, SYON PARK, BUCKINGHAM MIDGTON GU8 3JL Tel: 01295 833000 FISH, TROPICAL, GOLDFISH, etc.</p>
<p>Newbury Aquatic Centre Country Gardens Centre BATH ROAD, THATCHAM NEWBURY, BERKSHIRE RG13 2JL Tel: 01353 899000 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Hillingdon Aquatic Centre Hillingdon Garden Centre WELLS ROAD, HILLINGDON MIDDLESEX UB8 3JL Tel: 0181 810000 FISH, TROPICAL, GOLDFISH, etc.</p>	<p>Wycombe Aquatic Centre Marlow Garden Centre PURVEY LANE SOUTH, LITTLE MALLON, MARLOW, BUCKINGHAM Tel: 01494 384214 FISH, TROPICAL, GOLDFISH, etc.</p>

Pond Filter & Ultraviolet Maintenance Schedule

1. When the filter system is new, or the system has been at rest for any period exceeding 4 hours, the U.V. sterilizer must be switched off for approximately 14 days (with the remainder of the system operating normally) in order to re-establish the nitrifying bacteria within the filter.
2. The filter system must be running continuously 24 hours per day and every day of the year unless freezing conditions necessitate turning the system off to prevent damage or water loss. If this occurs, restart the system as soon as the weather permits and pay reference to Items 1, 3, 6 and 7.
3. Once the system is running, allow a reasonable period of time for the nitrifying bacteria to establish and produce a clear and balanced pond.
4. The U.V. tube **must** be replaced after 6 months use as its output becomes inadequate.
5. The quartz sleeve within the U.V. steriliser will require periodic cleaning i.e. in conjunction with Item 4. The quartz sleeve is **very** delicate so handle with extreme care.
6. The filter foams require lightly cleaning only when they have become so blocked with silt and debris that insufficient water is able to pass through and is therefore by-passing the filter foams via the overflow pipe. At this point, remove the filter foams and lightly rinse in a container using pond water or distilled water **but not tap water**. Excessive cleaning of the filter foams will kill off the bacteria which carry out the cleaning operation and therefore the system operates most effectively when the foams are dirty and at saturation point. Once rinsed, return the foams to the filter tank and refer to Item 7.
7. In order to boost the system after cleaning, or to assist in the establishment of the bacteria in systems that are new or have been shut down, the addition of maturation fluids will be beneficial to accelerate the bacterial colony's maturing process.

NB. Your filter system should operate in a trouble free manner if the above points are used as a guide, in conjunction with your regular maintenance, which we would suggest be carried out on a weekly basis to check the system for any problems, with action being taken in accordance with the above items.

Information provided
courtesy of
Chenies Aquatics,
Crown Lane, Farnham Royal, Slough, Berkshire.

HAVE YOU READ?

LABYRINTH FISH The Bubble-nest Builders by Horst Linke. Published by, and ordered direct from, TETRA (ISBN 89536-137-4) at £8.95 including P & P

On being asked if I would like to review a new publication, my first reaction was 'Oh no! Not another aquatic book!' with fears and visions of a tome weighing half a ton. I was pleasantly surprised to receive a book that I could actually carry, although a little too large to slip into my pocket.

Having been weaned on 'Innes' and, in later life using 'Sterba' as my Aquatic 'Bible', following books have been used to fill in the gaps in my aquatic education. I find that this is the type of book that fulfils this criteria and is therefore very welcome. Most Labyrinth species are considered within its 174 pages and although I am still inclined in terms of £.s.d. to believe that its price of £8.95 is enhanced by the excellent quality of the photographs.

The opening chapter consists firstly of informing us about the four 'Families' and their sub-Families. The second is entitled 'The Modern Aquarium for Labyrinth Fishes' the information ranging from the 'basically easy' to 'Technical Parameters' and

covers a very concise area of information starting with a description of both large and small aquaria and their setting up. This chapter will be of interest to newcomers as well as the expert who has been specialising in these fishes for years.

The main body of the book consists of discussing each species individually, this includes at least one photograph, a map of its original location, together with information regarding its ecology i.e. type of water pH, hardness, clarity and colour etc., sometimes even nitrate content, water depth and movement. Some of the lesser-known species are not so well covered but this is only to be expected when it contains fishes that are not as yet seen around the hobby. To sum up, a book that was a pleasure to read, it being a joy to see well-printed, first class photographs with a more than capable text to accompany them. I certainly recommend this book to both newcomer and specialist alike.

C.A.T. BROWN, FBAS J & S Member

DWARF CICHLIDS A Handbook of Their Care and Breeding by Horst Linke and Dr. Wolfgang Stoek. Published by, and ordered direct from, TETRA (ISBN 1-56465-168-3) at £14.95 including P & P.

This book, as with all in this range, is excellently produced for the price. It covers information on a large number of the Dwarf Cichlids found in the continent of South America and kept in the hobby. The book starts with a general overview of the classification of the Cichlids and the position of the Dwarfs within this. A review of the discovery of various species and the distribution of the fishes in relation to the geography of the continent, all of this in easy to understand text.

A good point about this book is that it allows the reader to relate the necessary conditions within the aquarium with the water chemistry and conditions in the wild. For example, the conditions needed to keep

Apistogramma nijsseni are quite specific (very soft and pH between 5 and 5.5) but keep them in these conditions and they will breed and flourish.

For each species, information is not only given on their maintenance, care and breeding but also on the original collections of many of them by the authors who have travelled and collected over large parts of South America and have fish named after them, e.g. *Apistogramma linki* and *Apistogramma staeki* for example. The photographs in the book are excellent, both of the fishes and the locations where some of them are collected. Overall, a book to recommend.

Chris Cheswright, FBAS J & S Member

(continued on page 33)

31

TRADEWINDS

Introducing the World's First "Click-fit" Pond System

"LAGUNA" by Rolf C. Hagen

The "Laguna Pond System" has been designed and developed as the most practical, compatible and complete range of water garden equipment ever. With its unique 'click-fit' fast couplings, installation and maintenance is easier and quicker than with any other pond products available today.

Power Flo Pond Filters - 2 types
Underwater & External

Underwater Filter

Its primary task a Pre-pump filter. Submersible filters protect the pump from clogging whilst cleaning the water by two simple processes:

'Mechanical' Filtration acts as a physical barrier, trapping suspended dirt in a foam block. 'Biological' Filtration is performed by beneficial bacteria which grow naturally on the filter media. These microscopic organisms convert harmful organic toxins into much safer nitrates which, incidentally, is excellent plant food.

The advantage? Gone are the days when one had to struggle with a rusty pipe clip to remove the pump. The new click-fit fittings enable easy removal for cleaning.

External Filters

The most advanced external filter yet! With two 'lift-off' media trays this superb design provides most thorough mechanical and biological filtration as well as being extremely easy to clean and maintain. For treatment of ponds up to 100 gallons. The Powerflo 4500 is for filtering ponds up to 1000 gallons/4500 Litres.

These hardworking filters will make pond care so much easier for you, tackling the problems of cloudy water and preventing the build of toxins. By using both filters (underwater &

external) you should have a really clean and safe pond for your fish.

Power Jet - Pond Pumps

These also come with the new 'click-fit' connections — pumps for every pond — a range of 7 pumps to suit most pond sizes from small features to large water garden projects. Every pump has been designed for powerful reliable performance, with low running costs.

Treatments for Pond Health

Also in the "Laguna" range are 6 "Environmentally-friendly" Treatments for Pond Health. Every product has been thoroughly researched and tested in their laboratories and proven to be 'pond-friendly' and effective in the treatment of adverse conditions which may arise in your ponds.

Biological "Pond Clean"

Will remove organic sludge, it instantly activates, and is harmless to aquatic life

Biological "Pond Detox"

Reduces ammonia, nitrite and nitrate, with effective removal of biological waste it will help keep your ponds healthy

Biological "Algae Control"

Reduces algae naturally — beneficial to aquatic life

"Water Prep"

Makes tapwater safe for fish

"Green Water Clarifier"

A fast acting formula and, finally

"Plant Grow"

A growth food for aquatic Plants

Trade Winds

"LAGUNA" Fish Food

The advertisement says "Fish react eagerly to Laguna floating fish food, rising to the surface of the pond and giving you the pleasure of watching them feed".

"I wonder" was my first reaction to this statement. I have for many years been feeding my Koi on a well-known brand of Koi Colour Food. Attempts in the past to wean them on to other types of food were never really successful. I started one morning with the Laguna Floating Pond Food — it was gone in seconds!

I fed them on this for a week — the only problem is they like it so much every time I go near the pond they think it must be feed time and the water boils in anticipation of more food! I have since tried the Supreme Koi Colour Food; this is taken readily with the same enthusiasm. All food containers have a screw top-flipped lid which makes feeding easy and keeps the food sealed in.

About the foods: Laguna's floating fish foods re highly advanced formulations based on many years' knowledge and expertise in producing quality aquatic foods.

Floating Pond Food

A well-balanced, highly-digestible

Have Your Read?(continued)

AN ANGLER'S GUIDE TO FISH by various authors
(Dorling Kindersley £7.99 ISBN 0-7513-0401-8)

At first glance an odd choice for inclusion in these columns, but anglers also often have a cross-over point into the angling world and, in many cases, extra information can be picked up from reading what seems to be unlikely books.

Despite its modest size — 96 pages, flexi-bound — no less than 450 colour illustrations make identification of fish species (freshwater and marine, coldwater and tropical) from around the world a doddle. The illustrations,

food for all varieties of ornamental pond fish. It contains many natural ingredients, including fish, vegetables, yeasts, molluscs and crustaceans. Eagerly consumed, Stabilised Vitamins C.

Supreme Koi Colour

A highly digestible, specialist food for all Koi containing many natural ingredients and 3 colour-enhancers — Spirulina, Marigold Petal extract and Kelp — to bring out the vibrant colour of all Koi varieties. Highly palatable and digestible, the food also features Stabilised Vitamins C.

Finally, "Laguna" also has the **Power Glow Underwater Light Set**

Power Glow Underwater Lighting allows you to enjoy your pond after dark with a stunning display of your fountain that provides the perfect backdrop to your garden party or barbecue.

Every light set comes with two lights fixed to a heavy block for easy submersion and is simple to install without tools. A selection of coloured lenses are available separately, which lets you create some exciting effects to really bring your pond to life when the sun goes down.

Peter Furze, Past Chairman F.B.A.S.

which are artwork rather than photographs, are superb and details on each species include both natural distribution and techniques for catching, including which bait to use. If you're not up to bobbing about in boats, or standing up to your armpits in lakes or rivers, then using this book to identify smaller fish for possible culture in aquariums might just appeal to you — you'll certainly be amazed at what's out there!

Dick Mills

Corydoras treitlii

John Edwards gets off to an unintentional good start

Corydoras treitlii, believe it or not, was the first 'Cory' that I spawned although I must be honest and say it was not my intention to do this for the fish had only just been purchased and were still in quarantine.

We had attended a fish show in North London and it was our habit to go round the local shops to see if we could pick up any unusual fish. After visiting three shops and picking up a few promising fish we arrived at a shop in Epping just to see most of our friends from the Show driving away. Just our luck, I thought, perhaps they might have left a few fish behind but not by the look on the face of the shop keeper — it looked like he had just won the Lottery. Well, down to the hard work peering in the tanks seeing if anything worthwhile had been left. After looking for over half an hour I discovered a pair of *Corydoras* in a bare tank on the lowest level, you would not have given these fish a second look (and plenty of people had looked); they were nearly white but they had one interesting feature — elongated noses. Although I could not put a name to them I did know that I had not seen them before, despite their colour. Having got them home I put them into a small quarantine tank 10" square and, after only one day, the colour change had been quite significant with these fish now showing signs of pigmentation.

After a week the fish had settled down and were feeding on *Tubifex* and their condition had improved immensely. I decided to move them to a larger tank that had become available, it contained Twisted Nails and Java Moss and was in a position in the fish house that caught the sun in the early morning. During the next few weeks the fish were regularly inspected for signs of disease and it was during these inspections I noted that the male fish had gone black, the female being more of a grey colour: these fish typed out to be *Corydoras treitlii*.

34

Being that the sun played on the tank the plants grew at an alarming rate and soon it was not possible to keep an eye on the fish in that tank without harvesting some of the plant. It was during this plant collection that I discovered baby *Corydoras* about 10mm in length; they were obviously *treitlii* because of their colour. The following week I spotted several fungussed eggs on the plants, and on further inspection quite a number of good eggs were found; several containers were cleaned out and the eggs collected. This took over an hour, over two hundred were collected. An anti-fungal agent was added and air stones placed in the tanks. Over the period of the next two days many of the eggs fell to the fungus until in the end only a few had survived, these hatched out and were placed in a rearing tank to grow on.

There were many such spawnings and I was always too late in detecting them, it was only when they started to fungus did I see the eggs, the fact that the eggs were a pale green did not help, they blended in with the Java Moss too well! As I gained in experience it became easy to spot the bad egg, these eggs had a very small white dot in them, at first these eggs from each spawning were placed in a tank by themselves but after many spawnings no fry were forthcoming. In further spawnings they were discarded at once. Can I just add at this stage they withstand being rolled between finger and thumb whereas a fungussed egg will not withstand such pressure.

I decided that the problem was that I was not getting to the eggs fast enough so early morning searches were started, the days were now getting longer and there was some daylight before I left for work; eggs were found but no improvement to hatching rate occurred.

KOI ... The Living Jewels

The Japanese have bred these beautiful carp for a great many years, and have aptly named them 'living jewels' and indeed when the sunlight shines on their highly colourful bodies cleaving through the water, they do sparkle and glitter to the eye.

Originally the carp were bred for food, and were a rare delicacy for the poorer regions of Japan, where they were enjoyed to the full. Then, one day, a discerning young gentleman sought a means of enhancing his livelihood by breeding these carp for commercial gain, and consequently the age of the 'brocaded carp' was born!

The *Koi* have a very high degree of intelligence which the Goldfish and Shubunkin do not possess. Their diet is very varied and they will eat anything that is not spiced, although basically they are vegetarian.

Koi need greater care than Goldfish, as their growth is rapid (up to 3ft in this country) a small garden pool is quite unsatisfactory. The pool should be at least 10' x 6', the depth is also a major factor, at least 3' more if possible, and clean filtered water is essential.

Koi live to a great age, the oldest *Koi* on record was named Hanako, she died at the age of 223 years. Hanako weighed 7.5 kilograms and was 70 centimetres in length. The age of a *Koi*

is denoted by the annual rings on its scales, the same method as aging a tree. The trunk of a tree has annual rings, so has fish scales, which can be counted under a microscope, age is thus ascertained and scientifically proved.

Hanako lived in the mountain regions of Japan and it was also established that *Koi* living in the same pool were between 149 years and 168 years of age, but it is very doubtful if a *Koi* would reach anywhere near this age in our climate.

Koi first arrived in this country in the late 1960s and can survive all weather conditions, although it is a consensus of opinion that some sort of protections should be provided over our long winter months.

Winters in Japan are severe, but only last three months, whereas in this country can boast of winters lasting most of the year! Prolonged cold can sometimes affect *Koi*, but on the whole they are a very hardy cold water fish.

It is difficult to put into words the joy and fascination of having a large fish swim up from the depths to have its head stroked like a dog — they are very affectionate and playful, many are finger tame and will eat from your hand. Life would not be the same without these beautiful creatures of the fish world.

Joan Cannon,
Wessex & Southern *Koi* Society

Corydoras treitlii

(continued)

This continued for a few months until one night I was showing a friend round the fish house and was in fact pointing out these particular fish when I realized that they were spawning. I was amazed, the time being just after 10pm and it had been dark for 2 hours and the fish had just started spawning! Of course we stayed, and collected as many eggs as we could —

no wonder I was always late collecting their eggs! This was not a good time to collect eggs so from then on I left them to spawn and raise the fry themselves but this did not bring me many fish. As I spawned other species of *Corydoras* I realised that the problem with these fish was that they were too old being over 2" when I purchased them. I have always found that I have best results from young fish.

35

THINKING OF A GARDEN POND?

From an original article by Des Bryans.

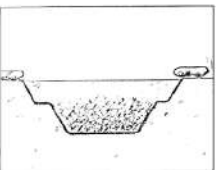
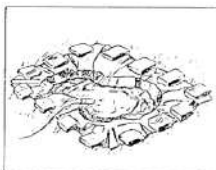
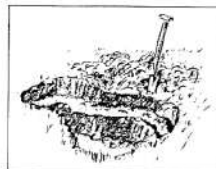
Well planned and carried out, there is no single garden feature that can give more pleasure than a beautifully planted garden pond.

You must first choose the site with care, well away from trees, as falling leaves can be a problem in Autumn. You will also wish to get maximum sunlight as this will ensure the success of your plants. Having picked the spot make your pond as large as possible. Small ponds never seem to do so well and green water will always be a problem.

Now you must decide on the shape, this is best done by laying out the garden hose and moving it about until you are pleased with the overall look. Keep it simple, do not have sharp points or too many curves, as this wastes liner and encourages creases. At this stage you will wish to know how large a pond liner will be required.

Measure the overall length, plus twice the maximum depth and add 1 foot, this will give the overall length, now measure the width plus twice the maximum depth and add one foot, this gives the width of liner. Thus a pool 8' x 5' and 3' deep would need a liner 15' x 12' (8 + 3 + 3 + 1) x (5 + 3 + 3 + 1). Now the work begins.

Commence digging, but always work just inside the finished outline to allow for final trimming and shaping. The excavating is started leaving marginal shelves where required, these should be approximately 1" wide and 9" below water level. I like to place the shelves at the back of the pond so as not to hinder the view from the front, and also when you are hard feeding the fish you will not have to reach over the lises etc.



THINKING OF A GARDEN POND?

(continued)

Short wooden pegs are inserted 3' to 4' apart around the pool and tops levelled using a spirit level. The top edges of the pool must be levelled. This is important as the water will show up any faults. I feel that a pool of 3' deep is a good general purpose one in which you will be able to keep your fish in good health and also grow some fine waterlilies.

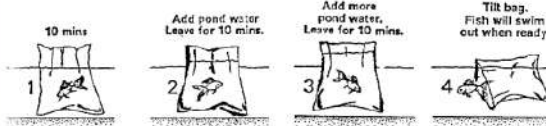
When all digging has been completed the sides and base of the hole must be checked for any sharp stones, roots etc. and these must be removed, where this is not possible, beat them down with the back of a spade. You must now line the whole of the pond with a 1" layer of damp sand, (an old carpet will do if it has to), this is to protect the liner. Next drape the liner loosely into the excavation.

Congratulations and welcome to the world of water gardening.

Fish for Pools

Select fish two weeks after planting pool.

After purchase and during transit, protect your fish from sunshine. Transfer fish to pool soon after purchase following steps 1 to 4.



FEEDING

During the first season, the fish will need regular feeding. Experience will soon tell you how much to give them. In subsequent seasons, they will also require feeding but will derive a certain amount of nourishment from the pond itself.

WINTER

Do not feed the fish during autumn or winter. Make sure that ice is not allowed to stay on the surface for long, melting it with hot water — DO NOT BREAK THE ICE. To prevent ice forming, electric pool heaters may be used.

36

37

MEMORIES OF A TIRED OLD AQUARIST

Wart Ellery stirs his stumps once more

Club Nights rely heavily on the entertainment provided and this is a headache for the poor guy who puts his hand up at the Annual General Meeting and says he is volunteering to be the Entertainments Officer for the coming year.

Quizzes, Auctions, Discussion nights are O.K., but what the hard core members want are lively, informative, entertaining Speakers on all types of subjects. When I first went to a Club some umpteen years ago, there was an abundance of Speakers — in fact, some of them used to get annoyed because you couldn't always fit them into the Club's programme every year!

For the price of your Subs, a strip of Raffle Tickets and a cup of weak tea you could, in the course of a year, learn how to set up a tank, breed fishes, dig a pond, make a tank etc. etc. I remember the guy who gave talks on fish on postage stamps, the night we turned up at Ilford and watched a British Rail Recruitment film; equally unforgettably was the bloke who gave a talk on glass and demonstrated toughened glass by putting a sheet across some bricks and jumping on it — the ambulance took 20 minutes to arrive, he broke a leg! One Club member spent all evening cutting the bottom off a Pickle Jar (you must remember the Ranco range of DIY gadgets of some years ago) to make a Brine Shrimp hatcher — he half amputated a finger doing it — then dropped it. Any talk on Snakes, Spiders and the like is likely to clear the first two rows of audience once the 'moving black bag or sock' appears.

I always like Inter-Club contests and can well remember a three-legged meeting between Southend, Walthamstow and East London when we had 150 fish and 4 judges. The entertainment was a video show (very new and adventurous then 12 years ago). We all sat and watched 'Head Cleaner' not very long and a bit tedious I seem to recall.

Like many other Speakers, I can remember giving talks down on the allotment at Croydon but I've also 'appeared' in a Pulpit at Kingston, a Windmill at Uxminster, and a cinema foyer (while the main feature was running) at Bexley. Naturally I've been double-booked, triple-booked (at Hounslow) and given an in-depth lecture on Synodontis at Swale and even interrupted by a Stripper-gram (try following that!). Other highlights included putting the lights on at the end of a talk and having to wake the audience up (Walthamstow), talking to three people at S.E. London and then 150 at Southend! During a Quiz Night I ran between Dulwich and S.E. London both teams ended up fighting on the floor!

But I must admit it has been a lot of fun over the years and I wouldn't have missed Club Nights for anything!

Editor's Note: Speaking in the Mayor's Parlour at Newbury Town Hall is intimidating with those huge portraits of past Mayors looking over your shoulder and I'll never forget one Society meeting where my projector got plugged into a time-controlled socket which looked like meaning 'an early bath' for all concerned, until we sorted it out. A pipe-burst in the kitchen of one Society halfway through a winter-time talk livened up audience reaction quite a lot too.

Would like to hear of other 'it happened to me' or 'I was there when it happened' events, from the Club Night Scene from anyone willing to admit to anything.

SHOWPLANTS

Why not feature a stunning 'floater' this season? We have three suggestions for you.

Pistia stratiotes — Linne

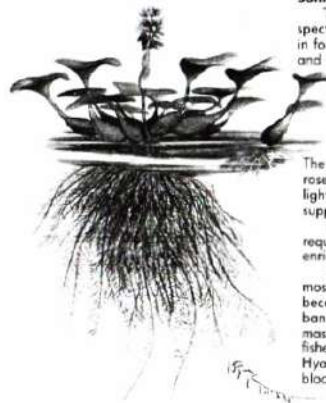
Commonly called the Water Lettuce, a very pretty plant has a rosette of broad-topped, velvety pale-green leaves, the whole plant floating on the water surface. Thick roots hang down, reaching almost a foot in length and these are invaluable as a safe sanctuary for fry from any recent spawnings.

Place a young plant in a small deep aquarium with the water depth sufficient to let the roots just touch the gravel; place a spotlight over the plant. As the plant grows, increase the level of both the water and the spotlight. Your plant will then grow to Show size (but remove dying leaves before placing it on the Show bench!) The gravel must be old, used or enriched with loam.



Eichhornia crassipes (Martius) Solms-Laubach

The Water Hyacinth has a spectacular flower and is most unusual in form being of a violet-blue colour and lasting a maximum of 48 hours.



The shiny bright foliage grows in rosettes with leaf petioles swollen into light, pith buoyancy ovals which support the plant at the water surface.

This plant has very large roots that require being in contact with an enriched substrate.

The plant has been introduced into most tropical waters where it has become somewhat of a curse; on the banks of Lake Victoria, it floats in massive areas stopping passage of fishermen's boats to the shore. Water Hyacinth was outlawed in Sri Lanka for blocking up irrigation channels.

39

SHOWPLANTS

(continued)



Stratiotes aloides — Linne

The Water Soldier is found throughout Europe and northern Asia. This plant requires very little attention other than just sitting in our garden pond in bright sunlight. Although it likes the sun, it grows better in coldwater than tropical.

Rosettes of dark-green to pale-red broad leaves are coarsely-toothed at the edges. These leaves grow up to nine inches in length and are very sharply-pointed and can pierce skin. A feature of the plant is that it rises and falls in the water according, some say, to seasons whilst others maintain it is due to changing water chemistry.

GROCKLEMANIA COMPETITION WINNER

The winner of the Grocklemania competition as featured in the March issue of FISHWORLD Magazine was:

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PLANTING THE AQUARIUM FOR GOLDFISH

by Jennifer Baker

Anyone who has tried knows that keeping a well-planted goldfish tank is a headache. The author gives her findings for a number of varieties of water plants.

There are many reasons for cultivating good plant growth in the goldfish aquarium: the predominantly greenish hues of aquatic plants form an attractive and restful background against which the bright colours of the fish are thrown into vivid relief; a well-planted tank can be as near natural a habitat for the fish as may be achieved indoors, dense thickets providing welcome shade, and shelter for the shy, the young, the bullied or the slightly under-par; strongly growing plants discourage the proliferation of algae, whilst encouraging the production of other microscopic forms of life upon which the fish may feed, and they also assimilate some of the potentially dangerous soluble waste matter, thus contributing to the maintenance of healthy conditions in the tank.

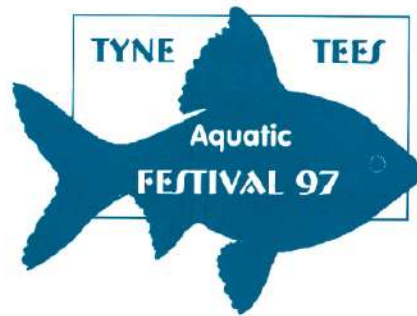
The tangled roots of floating plants or the bushy heads of Hornwort or Anacharis may act as suitable receptacles for the eggs of spawning fish; plants may constitute some of the vegetable element essential in the diet of the Carp family.

This last point, however, highlights just one of the problems associated with growing plants in the goldfish aquarium. Goldfish are voracious plant-eaters and particularly fond of the tender-leaved hydrophytes, i.e. true aquatic plants such as anacharis, Cabomba, Hornwort *Myriophyllum* etc., which lack tough, fibrous skeletons. Yet these are just the plants which grow well in cool water and which are therefore recommended for the goldfish aquarium by the majority of writers, few of whom warn the beginner to goldfish-keeping, scanning

the pages for advice as he sets up his tank, of the unfortunate destructive tendencies of his pets, however well-fed!

Furthermore, goldfish share their foraging habits with the other members of the Carp family, endlessly grubbing for specks of food in the compost medium. Consequently, all but the most securely rooted plants will be regularly dug up, with disastrous results both for the appearance of the tank and for the health of the continually disturbed plants.

There are, of course, other so-called 'coldwater' or 'pond' plants, often recommended as suitable for the indoor aquarium, which are less likely to be eaten or uprooted by goldfish, notably plants of the *Vallisneria* and *Sagittaria* genera, and some heavily fed or well-mannered goldfish may even ignore the gastronomic delights of the hydrophytes. But there are still difficulties. The temperature of the water in an indoor aquarium (particularly in one kept in a living room) with good overhead lighting, will probably remain steadily in the region of about 68°F to 72°F (20-22°C). In this sort of temperature range, the toughest and therefore least edible of the hydrophytes, *Anacharis* and Hornwort, tend to grow thin and stringy, becoming brittle, shedding their leaves, turning a rather unpleasant shade of green-yellow and looking generally unattractive: they may even turn brown and rot within a few weeks! Moreover, some aquarists have been unable to grow *Vallisneria* or *Sagittaria* species at temperatures in the upper sixties and low seventies, though these plants remain, on the whole, a good 'bet'.



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PLANTING THE AQUARIUM FOR GOLDFISH (continued)

However, there are several plants, usually classed as either exclusively, or mainly best-suited, to the tropical aquarium, which fulfil all the requirements of plants which must survive in the relatively hostile conditions of a goldfish tank — having tough and/or bitter-tasting leaves and stems, and an extensive network of roots — and which I have found will thrive in medium-to-low temperature ranges. These are rarely listed in books on goldfish-keeping but I have included them in the list of plants (shown here) which I have grown successfully in my goldfish tanks. I have also listed the majority of the plants recommended in the most easily obtainable books on goldfish-keeping, with comments on my own experiences with them.

I have designed the list to be of use to the beginner or the comparative beginner to goldfish-keeping, whose primary interest is his fish, and who does not wish to concern himself unduly with such matters as the pH factor of the water, nor with providing special conditions for the plants. The plants which I now grow successfully were discovered by the processes of trial and (often expensive) error over the past 18 months. I found the available literature on the subject of but limited value; the following list, therefore, is offered as a guide to those who would like to see their goldfish in an attractive, healthy, well-planted aquarium.

A few points about conditions in my own tanks: they are filled with aged tapwater, which in this area is slightly on the hard side; one is 24" x 15" x 12"; one 36" x 15" x 12"; the 24" tank is lit by a 12" clear 30 watt fluorescent tube and the 36" tank by a 24" Gro-Lux tube, for 12 hours a day; I use gravel with grains about the size of rice as compost medium; both tanks are filtered by external box-filters; the fish are fed fairly heavily about 4 times a day. Under these conditions, my fish

(Bristol Shubunkins, Fantails, a Moor and an Oranda) are flourishing, and the tanks contain crystal-clear water and good plant growth.

Acorus gramineus
Said to prefer cooler temperatures and a good top light; under these conditions, however, my specimens of the variegated form rapidly turned brown and rotted. It was not eaten, nor easily uprooted.

Anacharis (i.e. the various *Egeria* and *Elodea* species).

All species thrive in a medium temperature range under a good top light, but tend to grow brittle and stringy, and may be eaten. *Elodea* densely cultivated indoors, I have found to be the most successful, remaining fairly bush and well coloured under Gro-lux lighting, though the leaves are occasionally nibbled. Most of the species are cheap, readily available, and provide good cover.

Aponogeton
Several species of this genus will do well in sub-tropical temperatures; *A. crispus* and *A. undulatus*, in particular, flourish in shady spots. The bitter-tasting leaves are not eaten and the tubers and extensive roots provide excellent anchorage. However, plants of these species seem to need an occasional 'rest period'.

Bacopa
Though *B. caroliniana* and *B. monnieri* are reputed to thrive in cooler temperatures, I have had no success with them. The leaves soon become wilted and were then shed, leaving bare, stony stalks.

Cabomba
C. caroliniana is highly attractive — to humans visually and to fish gastronomically!

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Cryptocoryne

I have had great success with a number of species, particularly *C. affinis*, *C. beckettii*, *C. griffithi* and *C. willisi*, all fairly readily available and reasonably priced. The plants are not eaten, and though they grow rather slowly at first and need some protection, eventually anchor themselves with a good network of roots (this genus, on the whole, is said to prefer soft water but Nottingham water seems to be quite to its liking).

Echinodorus

Sword plants have not done well, sheering their leaves after only a week or so in the aquarium.

Eleocharis acicularis

My 'hoirgrass portions' have not died but have not expanded, and were easily uprooted.

Fantinalis

Both *F. antipyretica* and *F. gracilis* are well suited to the goldfish aquarium. A clump of the latter species grew well in the shade, but needed an occasional rinse-through to dislodge accumulated muck.

Coratophyllum demersum

Hornwort was not eaten very readily, though my fish 'pecked' at it. Since it does not produce roots, weighted stems were 'skirted' around the aquarium. It grew strongly and very brittle until it broke up completely.

Hygrophila

No species are easily obtained here, but *H. polysperma* is widely recommended as an almost indestructible plant for all types of aquaria.

Lemna

Duckweed is as caviar to goldfish — every lost speck was greedily devoured!

Ludwigia

L. palustris was not a success, but *L. natans* survived for several months. The cuttings soon rooted and were not eaten. However, this genus prefers a tallish tank as regular 'topping' seems to shorten its vitality. The leaves of my plants turned from darkish green to yellow, became smaller and eventually became easily detached from the stems.

Marsilea quadrifolia (or hirsuta)

My four-leaved clover plants died down quickly and never regrew.

Myriophyllum

After 48 hours, of several cuttings of *M. brasiliense*, placed in the aquarium, only the stems, cropped bare, remained.

Sagittaria

S. latifolia survived, but grew very slowly, if at all.

Vallisneria

V. spiralis forma tortifolia (Corkscrew or Twisted Vallis) has been a steady grower. The young plants needed some protection against uprooting until they established their under-gravel labyrinth of roots and runners. This species is widely available and quite reasonably priced.

Synnema triflorum (Water Wistaria)

this plant grew fast under a good light, but its leaves and softer stems were nibbled, particularly by the moor. The plant tended to grow tall and coarse with much stalk and few leaves. Cuttings soon established extensive root networks.

aquarian

by Dr. David Ford

aquarian

Q. I am about to order an aquarium 31" x 16" x 20". Should I ask for 10mm glass or do you think 6mm would be adequate.

N.F. of Pocklington, Yorkshire

A. The recommended thickness for large tanks is 15mm but, because of the weight problem, many manufacturers only use 10mm, relying on cross straps for strength.

Another factor is the age of the glass. New 10mm can be stronger than old 15mm because glass gradually becomes more crystalline and hence more brittle.

Buy the glass ready cut to size with the edges rough ground for safety in handling. Assemble with a light smear of transparent Silicone Sealer and hold

with sticky tape for a day. Make sure the edges were clean and free of grease by wiping with Methylated Spirit.

Then make water-tight by running Silicone Sealer along all internal joints, smoothing with a wet thumb. A blob of Silicone Sealer on cross straps is sufficient, including a runner for the drip tray or cover glass. Leave for another day.

Marine ply suitably veneerproofed with polyurethane varnish makes an excellent box, to which a 10 or 12mm window can be Silicone-sealed into place internally.

Stands must be adequate of course. If a cabinet or other furniture is to be used, can a large man (equals a 3foot tank) or two (6 foot tank) stand on the cabinet? A metal stand (angle iron) is best but make sure.

FROM THE CHAIRMAN

As you can see, I've just managed to grab a few lines before the magazine runs out of space! Already the first aquatic events of 1997 have come and gone and I, like many others, enjoyed YAF and most recently Grocklemania.

If you are out and about come and meet the Fishworld team in person at BBC Gardeners World Live Exhibition at the NEC (mid-June), or at the Hampton Court Palace Flower show (mid July) and at our own Show, FISHWORLD '97, at the Queensway Hall at Dunstable (30-31st August).

Young and old, newcomers or 'expert' we all enjoy our fishkeeping whether it's indoors or out.

See you around,

Joe Nathersell
Chairman FBAS

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