

AQUARIST & PONDKEEPER

DECEMBER 1998

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INSIDE
TETRA COMPETITION
PLUS
MARIGOLD GLOVES OFFER

**FREE
PULL-OUT
SUPPLEMENT**
BEGINNING WITH MARINES



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AQUARIST PONDKEEPER

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CONTENTS

FEATURES



Back to Basics

The Dwarf Gourami
comes under
Iggy Tavares' close
scrutiny

6



Broken Boats and Bananas

More drama on
Lake Malawi with
Sonia Guinane

10



Flowers of the Sea

Nick Dakin has an
underwater garden
for you

14



Goldfish Shows

A look back at some
of the events of
1998

18



New Tank Syndrome

Tarquin's back with
more of his unique
tank-spun
philosophy

24



PULL-OUT SUPPLEMENT

BEGINNING
WITH
MARINES

35



REGULARS

The A&P Costa Rican Quest

Derek Lambert looks for Tetras **58**



Showing an Interest

Kathy Jinkings tries out the show scene **72**



Discus Photo Call **75**



Caught in the Net	20
KATHY JINKINGS HAULS IN ANOTHER BATCH OF CYBERFISH	
Frogs & Friends	22
BOB & VAL DAVIES WITH HERPTILE NEWS	
50 Years Ago ...	26
DOWN A&P'S MEMORY LANE	
A to Z of Plants	28
AN ALPHABETICAL WANDER THROUGH THE AQUATIC PLANT WORLD	
Koi Calendar	30
LIZ DONLAN REPORTS ON THE KOI SCENE	
Koi News	54
INFORMATION FROM THE KOI WORLD	
Shore Watch	56
ANDY HORTON'S NATIVE MARINE PAGES	
Ask A&P	62
YOUR QUERIES SOLVED HERE	
News Desk	64
UPDATED INFORMATION FROM THE AQUATIC SCENE	
You Write	65
LETTERS PAGE	
Buy Lines	68, 70
A LOOK AT NEW PRODUCTS	
Book Reviews	71
REVIEWS OF THE LATEST OFFERINGS	
Famous Faces in Fiskeeping	76
JACK STILLWELL	
Society World	77
EVENTS FOR SOCIETIES	
Meet the Societies	78
TELL THE WORLD ABOUT YOURSELVES	

A paradox occurred to me lately that whilst 'going with the flow' is usually taken to mean a general consensus whereas a more likely truth is that less is actually more. Confused already? Let me explain.

During the past year I have 'branched out' more into some areas of the hobby where I have not been before (and, no, I don't just mean north of Watford).

COMMENT

At these more specialised events the interest has been almost palpable with attendances. Now comes the question, or rather the paradox.

Dealing strictly with numbers, surely attendances at any event ought to be in proportion to the number of 'practitioners'.

In this case any tropical freshwater event ought to command excellent turnouts — both visitors to, and exhibitors involved in, the event. But in reality this is not the case, whereas in smaller, more specialised interest, the fans are more than happy to get involved.

Maybe the whole hobby contains just too much interest over too large an area to be able to be ideally presented to Mr Average's liking or, looking at it another way, perhaps the majority haven't really made their minds up as to what they are really interested in and can't see the point in supporting such events!

Whilst not begrudging the specialists their successes it does pose the problem of what the hobby has to do to attract newcomers on a continuous basis who, by definition, cannot begin to appreciate what specialist treats lie in store for them unless they become involved with general fishkeeping in the first place.

As we go to press with this issue we were contacted by readers who had just become aware of the new legislations from MAFF that came into force at the beginning of November. These deal with importations (and the keeping) of North American species such as Sunfishes. We hope to be able to bring you a clear explanation of the situation as it affects the hobbyist as soon as we can.

In the meantime, may I take this opportunity to wish fishkeepers everywhere (whatever their interest or speciality) a Very Happy Christmas and a Successful New Year from everyone here at A&P.

Dick Mills
EDITOR

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★ PLUS: Tetra Competition, 21; Out & About, Yorkshire Aquarist Festival, 32; 1998 Annual Index, 34; Marigold Gloves Offer, 78



COVER

MAIN PHOTOGRAPH This impressive head belongs to *Symphorus nematophorus*, a species within the Lutjanidae group of Snappers, which has attracted the unlikely common name of the Chinaman.

PHOTOGRAPH: A&P LIBRARY



INSET PHOTOGRAPH The Dwarf Gourami, *Colisa lalia*, has been a long established aquarium favourite and is featured in our Back to Basics article this month.

INSET PHOTOGRAPH: IGGY TAVARES

Back to BASICS

The Dwarf

Iggy Tavares, PhD

PHOTOGRAPHS BY THE AUTHOR USING A PENTAX Z-20 CAMERA

Male blue Dwarf Gourami.

The Dwarf Gourami is a native of northern India. Here, during the hot rainy season, the monsoons flood the rice paddy fields, making excellent temporary homes for breeding

Looking for new fish to add to a community aquarium has always been an adventure to me. Neons and Cardinals had added a splash of colour to my tanks as had Serpae Tetras and Zebra Danios.

Swordtails and Guppies had been colourful as well as interesting, particularly as they had live fry which could be easily saved and reared. I was looking for something small, relatively peaceful and colourful yet different.

Then I came across a pair of wild type Dwarf Gouramis. I was astounded by their beauty and had to have a pair, particularly as they fitted my criteria for community fish.

Colisa lalia (Hamilton-Buchanan), the Dwarf Gourami, is a native of Assam and Bengal in northern India. Here, during the hot rainy season, the monsoons flood the rice paddy fields, making excellent temporary homes for the Dwarf Gourami to breed in, especially as the water is shallow and warm.

To facilitate breathing in these very warm, low-oxygenated waters, the Dwarf Gourami, which is an anabantoid, uses its special labyrinth



organ which is filled with air every time the fish comes to the surface.

The wild-type Dwarf Gourami is a very deep-bodied fish, where the male grows to about 2 1/2 in, while the female stays at about 2 in. Sexual dimorphism is very pronounced, since the male is a very colourful character, while the female is an attractive silver coloured fish with some indication of a faint blue barring pattern.

The male's body is neon blue with a series of narrow parallel, diagonal red bands, while all the main fins are a combination of red and blue dots.

In the breeding period the male's throat and belly go dark blue. It is truly a spectacular fish.

Both fish have a pair of elongated, thread like fins, which appear to be used as sensory organs of touch.

A range of colour strains of the Dwarf Gourami was available. There were red and neon strains to choose from, including the original wild type. In each strain the male was the colourful fish while the female from all these strains looked similar and was difficult to distinguish apart. I came away with a pair of wild type Dwarf Gouramis.

Gourami



small shoal of Harlequins and Cherry Barbs, which also come from Asia.

The Dwarf Gouramis quickly settled in and were soon eating TetraMin flake fed two or three times a day, with an occasional treat of Daphnia and Whiteworm.

Breeding

It only took a few days for the male to start building his bubble nest at the water surface in one corner of the aquarium. Intermingled with the bubbles that the male had blown he had incorporated some Java Moss, which perhaps helped to keep the nest together.

The plump looking female had for the most part stayed out of the male's way during the nest building of the bubble nest, which had gone on for several days. He had often tried to court the female, which usually ended in a chase.

Finally, the male's fin flaring displays lured the female under the nest. The male was now a truly majestic sight with all his colours heightened. Under his nest the male circled the female and finally wrapped himself around her.

The male then turned the female over so that she was upside down with himself over the top of her. In this position the female released her eggs and the male his milt. The fertilised eggs floated upwards.

The male broke away from the dazed female and placed all the eggs in the nest together with a few more bubbles. This spawning behaviour was repeated time and again for about an hour until the female had exhausted her eggs. The male then

chased her away and she took cover in the plants.

The eggs, tended by the male, hatched in about 24 hours. The tiny fry hung in the bubble nest for a further two to three days while they absorbed their yolk sacs. During this time the male gourami was kept busy returning dropping fry back to the nest and keeping the other fish away from his territory.

As soon as the fry were free swimming and independent of the nest the Barbs and Harlequins, in spite of the male Gourami's best efforts, slowly picked them off.

Red male Dwarf Gourami with nest.

FACT FILE

Scientific Name: *Colisa lalia*
Common Name: Dwarf Gourami
Distribution: Assam and Bengal in Northern India
Size: 2in (5.5cm)

AQUARIUM CARE

Aquarium size: 36x15x12in (90x37x30cm)
Aquarium decoration: Well planted tank
Temperature: 26-28°C
Water: Hardness, not too fussy (pH 6-7.5, 4-10°DH approximately)
Diet: Flake foods, some live or frozen food

Aquarium set-up

The Dwarf Gouramis were housed in an established 30in aquarium which had an undergravel filter powered by an air pump so as to create little turbulence and a heater thermostat to maintain water temperature at around 25-27°C.

The tank had regions of dense plastic plants towards the back, along with bog wood caves and Java Moss to afford protection to the female should she be harassed. The other tank inhabitants consisted of a

To rear fry it is probably best to use a smaller aquarium with just a pair of gouramis to start off with. Immediately after spawning the female should be removed for her own protection. The male gourami should be removed once the fry are free swimming.

The tiny fry need to be fed on infusoria, a green water suspension

BACK TO BASICS ... the Dwarf Gourami

containing tiny organisms such as rotifers. This can be supplemented by finely powdered TetraMin flake

within a few days.

The main causes of fry death is starvation, due to insufficient food being provided, or water pollution, due to much prepared foods being supplied, which goes uneaten and rots. A fine balance, therefore, needs to be struck together with frequent partial water changes. The growing young fish should not be overcrowded and should be moved to bigger tanks as they grow.



Red male
Dwarf
Gourami.

Conclusions

Dwarf Gouramis are a beautiful pair of fish which will add colour and interest to the community aquarium. They are now available in a range of colour strains, all of which are very pretty and also popular.

Dwarf Gouramis are a hardy fish that are readily available and are surprisingly cheap as they are mass-produced on fish farms in the East (£5 for a pair in the UK). The Dwarf Gourami makes an interesting breeding project where spawning is easy but the harder part is to successfully raise the tiny fry to adulthood.

Fish kindly provided for photography by Fin King Aquatics, Elephant and Castle, London.

ADVERTISEMENT FEATURE 

“Remember when the bin men went on strike?”



by Les Holliday
Aquatics Advisor
to Hagen (UK) Ltd



Waste disposal is probably something we all take for granted, until we're occasionally reminded how important it is. Do you remember the dustbin men's strike in the 70's, with the mounting piles of stinking rubbish in our streets? It wasn't just unpleasant, it was also a situation that provoked public health warnings from the Government.

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Sonia Guinane continues her Lake Malawi safari

PHOTOGRAPHS BY THE AUTHOR

Broken Boats



Nimbochromis livingstonii at Cobue, Mozambique.

Wednesday, October 1

As dawn breaks we are still on the Mtendere and all enjoy a breakfast of eggs, or eggies as the Malawians call them, fries, toast, coffee and tea. All of us look very dishevelled, dirty and in desperate need of a shower, as the ferry drops anchor at Chismulu Island.

Here many people disembark with many more waiting to board; the whole process takes about two hours before we depart for the last sector to Likoma. Some of Stuart's boys are waiting for us in one of his boats, so that we, and all the dive gear, can be offloaded before all the

The boat trip to the beach only takes a few minutes and it is a lovely feeling to have both feet safely on terra firma again

bananas, pigs, chickens, etc.

The boat trip to the beach only takes a few minutes and it is a lovely feeling to have both feet safely on terra firma again. We walk to the Akuzike (which means greetings in Malawian) Super Resthouse at the

top of the sandy beach.

Everyone is delighted to discover that the facilities are on a par with those of the Africa Bay, flushing loos, cold showers and mozzie nets! One thing that is lacking on Likoma is electricity, but we have taken Ad's advice and came prepared for all eventualities.

The longer that we spent with him both Dave and I and the rest of the 'gang' are greatly appreciating his organisational skills, patience and wonderful sense of humour.

That afternoon following a most welcome shower and a lunch of bananas, which at times seems the main part of our diet, we are taken by Barnabus to Maingano Island. The boat used has an outboard motor,

& Bananas

but is very small and there are ten of us on board, so it is rather a tight squeeze.

As we approach Maingano, crocodiles are spotted sunning themselves on some rocks and suddenly my snorkelling is immediately put on hold. Undaunted, the divers get ready, and over they go.

I have yet to determine, whether they are very brave or just completely insane! Once again Dave is delighted with the cichlids that he has seen, especially the *Melanochromis johanni* 'maingano', as this has always been one of his favourites. He also observed *Cynatlopia afra*, *Pseudotropheus aurora* and a magnificent *Protomelas* sp. 'spilonotus Likoma'. I really wish I could share his experiences.

African nights fall quickly and by 18.00 it is very dark. However, on this occasion under the oil lamps in the courtyard of the Akuzike Resthouse, Mary and I lay the table for dinner under the stars.

Dave and I smother ourselves with Deet mozzie spray; as a result it is possible to sit outside while we eat our supper, an Ad speciality of boiled rice mixed with either tinned tuna or meat. This feast was washed down with fairly cold bottles of 'Greenies'. Dessert consisted of the favourite standby ... yes, you've guessed it — bananas!

Thursday, October 2

It is quite cool early in the morning, so breakfast, consisting of toast, eggies, tea or coffee is very welcome especially as a very strong wind is blowing. Mary, Dave and I explore the little market just outside the Super Resthouse. I decide to buy a large bar of soap as Dave and I are fast running out of clean clothes and I intend to do some washing in the Lake while the others are diving.

By 8am the wind had dropped

sufficiently for the departure to Mozambique. Lars, Gunther and Ad are all of the same opinion that, although Malawi is a poor country, it appears affluent in comparison to conditions in Mozambique.

All of us are well aware of the difference when we drop anchor on arrival and make our way to passport control. For a massive sum of 50 Malawian Kwatchas (about £2), we are given permission to dive or snorkel in Mozambique territorial waters.

From the passport control office it is possible to see the shell of a Catholic Church which had obviously been a beautiful building at one time. People all look undernourished, especially the children, which is very sad. It causes some reflections amongst us, most of whom (including me!) are overweight because of our opulent European lifestyle.

At Cobue the divers begin their customary procedure. As the water is rather rough I am not sure whether to snorkel or not as I do not want a repeat performance of more embarrassing situations.

Mary has a sudden brain wave — why don't we put the long rope along the boat's side so that she and I have something to hang onto when we want to get out of the water. Feeling a lot more confident I am soon back in the water, closely followed by Mary.

I am pleased that I decided to be brave as I see some bright blue *Pseudotropheus socolofi*, *Fossochromis rostratus* and some gorgeous blue 'Haps' which I think were *Protomelas annectens*. I thought that getting out would be no problem, but yet again, I am being hauled out of the water, but as time went on I became a lot more efficient with the rope attachment.

Varied species at Chismulu.



After his dive Dave was most impressed by a species of *Cynotilapia afro* that he has never seen before and one that Ad was describing before the dive. Apparently, the top half of the fish is completely yellow and it is only found at this location. Dave has also seen a *Nimbochromis livingstonii* lying on the sand playing dead, in the usual fashion of this well-known predator; we actually had a large male *livingstonii* in one of our aquariums that did this, and it was possible to see how his breathing slowed considerably whenever a small fish swam past him.

The next location is Mara Point, not far from Cobue, just off the Mozambique coast. Divers away and once again I am snorkelling while Mary does some of her laundry over the side. I did not see much as the water was not very clear, but at least I managed to clamber out of the water unaided.

Dave and the others saw many *Copidichromis* species, including *mloto*, with the males defending their sand nests. He was also surprised at how close together all these nests were. He saw the popular *Pseudotropheus zebra* 'Blue Blotch' and another two favourites, *Nimbochromis linni* and *Pseudochromis elongatus*.

Supper back at Likoma is a repeat of the previous evening — sitting under the African stars, smothered in Deet, eating Ad's speciality washed down with a fairly cold Greenie. It is so peaceful, no traffic,

BROKEN BOATS AND BANANAS ... a fishy tale from Lake Malawi

no pollution, just excellent company and mosquitoes by oil-lamp.

Friday, October 3

This morning starts with the usual mad scramble to be the first in the shower. With three females and five males it is not surprising to be waiting patiently outside the 'ladies' shower to have the door open and out steps a male of the species.

Today it is Ad who emerges from the ladies, but as I have already said, in Africa anything goes! Breakfast is quickly consumed, just as Barnabus arrives.

Although the lake is very rough we go anyway as the wind should drop mid-morning. It was just my luck to be sitting on the starboard side where the spray from the waves was continuous, although by degrees everyone is getting wet.

I am a little nervous as the waves were very high but I have every confidence in Barnabus, who is an excellent sailor. At least I now have my 'lake legs' as I no longer feel any

nausea.

Eventually we arrive at Chismulu Island where Mary and I will be 'marooned' while the rest dive at Taiwan Reef, just a rock sticking out of the water in the middle of nowhere. Why do I get this horrible feeling that they are pleased to get rid of us for a few hours and that if Dave pays Ad enough kwachas they might conveniently forget to pick us up on the way back?

Mary and I soon discover that it is possible to snorkel from the rocks on the shore which suits both of us very well. In very shallow water it is possible to see many species of both *Mbuna* and 'Haps', including many *Pseudotropheus tropheops* 'Red Cheek', *Melanochromis* sp. blotch, *Fossochromis rostratus* and another *Protomelas* species which was very bright blue with a half yellow dorsal fin that I was unable to identify.

Eventually we were 'rescued' (Dave obviously did not have enough money to pay Ad) and the diving at Taiwan Reef is the main topic of conversation for some time. Gisela is the first female ever to dive there, so she will get her name in the record books.

The reef is a cliff with just a sheer drop straight down with many fish everywhere. Dave saw many of the beautiful *Protomelas* sp. Taiwan Reef, *Labetotropheus trewavase* and *Pseudotropheus sauloi*, who was named in honour of one of Stuart's divers. *Melanochromis johannii* with the yellow female are also found

Kambiri Point.



here as are *Copidichromis borleyi*.

At a reef just a short distance from Chismulu the divers are in the water once again; Ad uses his GPS, Global Positioning System, frequently to locate the exact position in the world where certain species are found. The signal is bounced off a satellite and is accurate to within 5m, which is incredible.

The voyage back is very long. I am wearing Ad's wetsuit jacket so I stay both warm and dry. Dave is having a problem with the big toe on his left foot; he broke the nail before we left the UK and his fins have now rubbed it very sore and it has become infected. Various remedies are suggested, including a visit to the hospital on the island.

He decides to 'operate' on it himself when we return to the Akuzike. I 'help' by holding the torch but have to keep looking away. Ad loans Dave some antibiotic paste which he always takes with him on his journeys into hot climates. I am suffering from a sore lip caused by the mouthpiece on my snorkel, but that pales into insignificance when compared with Dave's toe!

An excellent supper, rice, peas and ham with a side salad a la Mary is followed by bananas that she bought at the market. Unfortunately, these are not completely ripe which

causes all of us to have extreme facial contortions as we attempt to consume them.

Needless to say, nobody had 'seconds', but Ad produced two tins of peaches which were then passed around the table with each person forking a slice and then passing on the tin. This game of 'pass the Peaches' provided great entertainment which was to be repeated the next evening. It is certainly possible to survive without electricity and television!

Saturday, October 4

Destination Ndumbi Rocks. The lake is still very rough and Dave cannot dive as he must keep his foot dry. There are two boats today, as some of Stuart's divers are going to collect some fish. As the anchor is thrown over the side of our boat there is a loud bang and Barnabus suddenly seems very worried.

Upon closer inspection he announces that the boat is broken and continues to look very concerned. With that, yours truly really panics, donning snorkel vest which is inflated to its maximum, praying and suggesting to Barnabus that perhaps I should travel back to

Likoma in the other boat.

He is wonderful and tries to reassure me but I am very scared. It is a very long way to the nearest shore so the other boat is the only option.

Eventually a plastic fish bag is poked in the large crack with a metal coat-hanger and it would seem that we will get back on one piece. On arrival at Likoma, where I was frantically kissing the ground, the size of the crack became apparent. I am glad that I did not know how large it was while we were still on the water! Barnabus is my hero for I will never forget the broken boat.

Back at the Resthouse we learn that we will have to stay an extra night due to the late arrival of the Mtendere. This means that there is an opportunity to visit the beautiful cathedral, which has been built on the site where witches were burnt in years gone by.

The 'Last Supper' by oil lamp is a repeat of all the others, but with a double helping of 'pass the peaches'.

In spite of the broken boat I have really enjoyed the time on Likoma, where it is so quiet (apart from the chickens). The air is so clean and the laid-back pace of life is such a contrast to the western world. As Lars so aptly often states: "This is Africa".

Fisby Tales ...



"Well, it's been two years since I dropped the watch in, but now I think, what the heck, I'll leave it there!"

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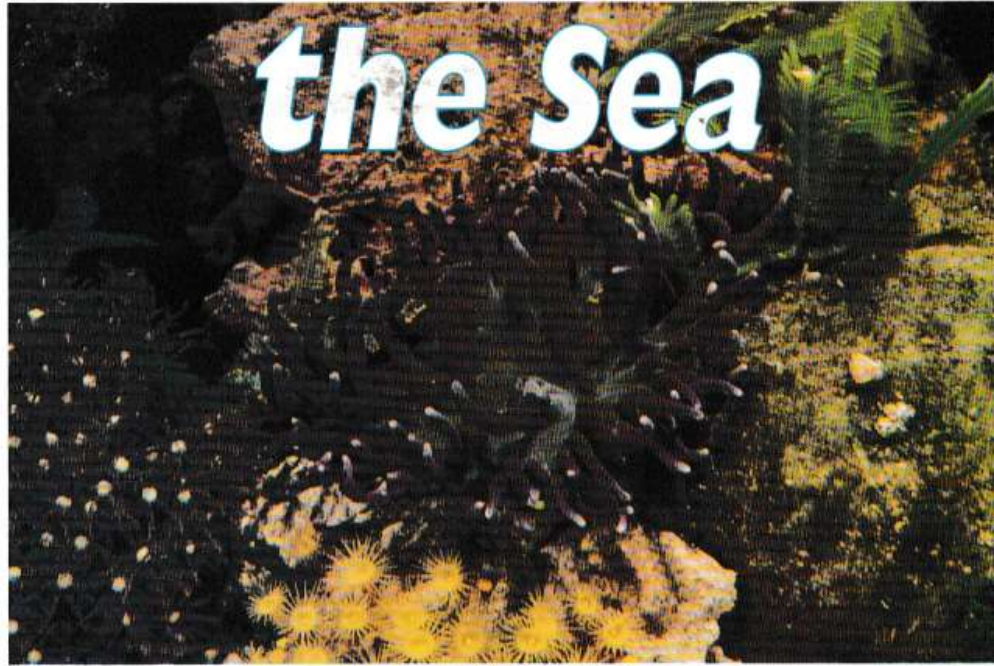
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Nick Dakin looks at Sea Anemones including Sea Pens

PHOTOGRAPHS BY THE AUTHOR

Flowers of

the Sea



Sand Anemone.

Phylum: Cnidaria

Almost every enthusiastic marine hobbyist must be either keeping or tempted to keep an anemone.

Whether it be to give a natural home to clownfish or just the mere fascination of these undersea 'flowers' anemones have a special place in the heart of the dedicated mariner.

Distribution and form

These ancient animals occupy all the oceans and seas of the world and species are to be found throughout the very coldest to the very warmest regions, such is their ability to diversify and adapt, albeit over aeons of time.

Anemones are very closely related to stony corals, but whereas stony

The mere fascination of these undersea 'flowers' have a special place in the heart of the dedicated mariner

corals are made up of polyp colonies, anemones can be seen as one large polyp.

Accordingly, the structure of an anemone is extremely simple and has changed remarkably little over millions of years. They are basically a 'bag of skin' which is inflated with water to give form.

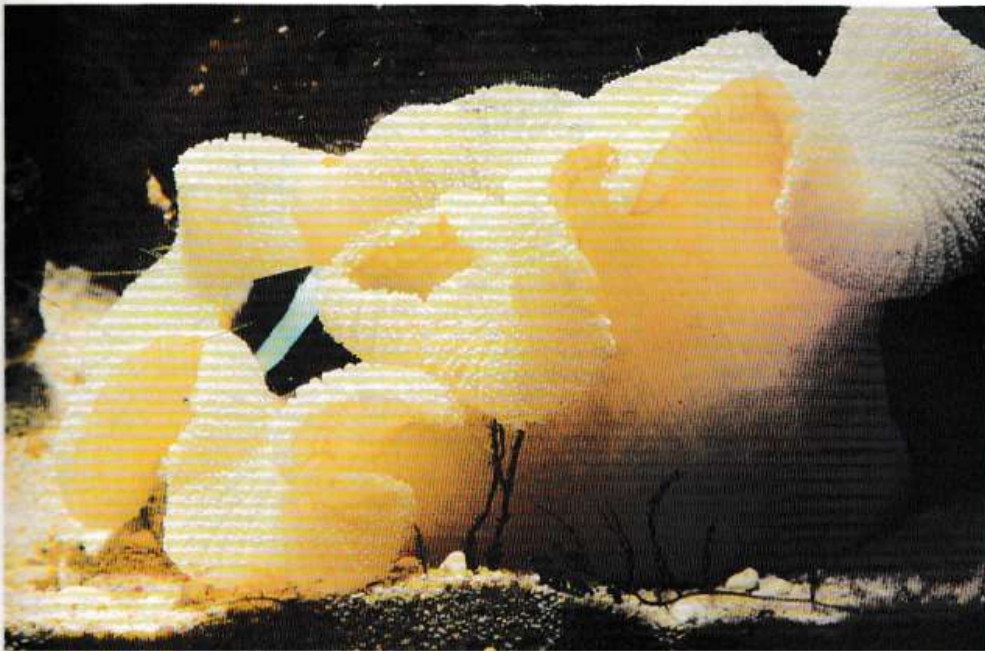
Many species have a sucker-like foot used to cling onto rocks, whilst in others the foot is more adapted to burrowing. Above the slender body is a disc with a mouth in the

centre and tentacles radiating out from the middle. Every tentacle is tipped with a battery of stinging cells called nematocysts and these are used to deter predators and capture prey.

Each nematocyst is spring-loaded with a hollow, barbed thread, through which a paralysing poison can pass. The firing of each cell is governed by it coming into contact with anything edible. Any structure lacking in protein usually fails to trigger the firing mechanism, eg, algae.

Once ensnared by the barbed hooks the prey is then passed through the tentacles and continually stung until it ceases to struggle, finally being engulfed by the central mouth. The fierceness of the sting varies from species to species and some are capable of producing a nasty rash in humans.

Anemones are to be found in



Carpet
Anemone,
Stoichactis sp.

many attractive hues; green, yellow, red, pink and purple. But in nearly all cases the underlying colour is brown. This colour is brought about by the presence of a single-celled algae called zooxanthellae which lives within the tissues of most species.

The relationship is truly symbiotic with the anemone deriving oxygen and nutrients from the algae, whilst

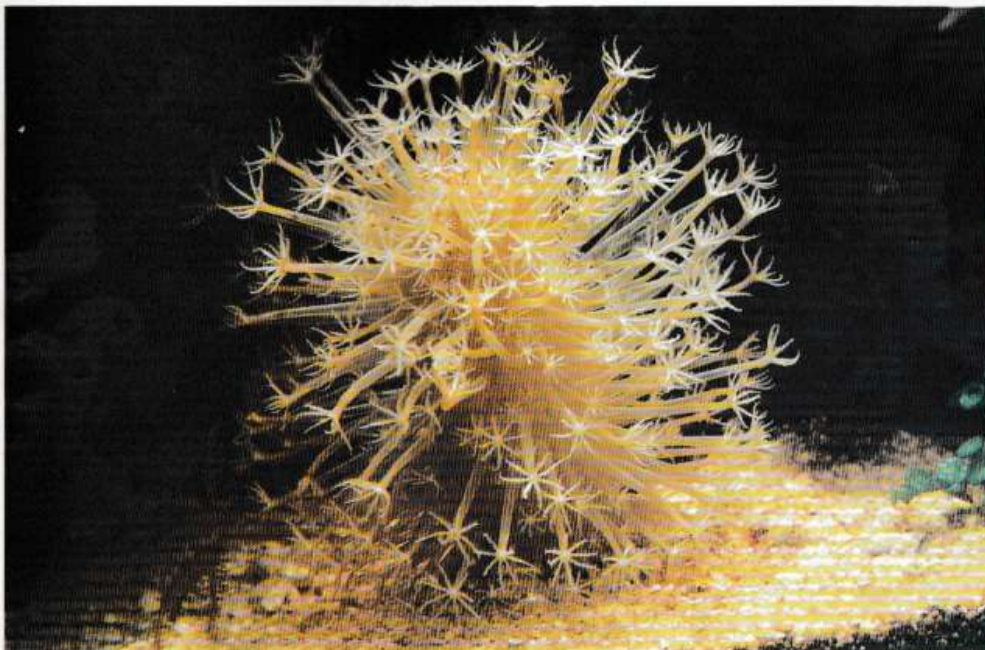
the algae has a secure home in bright sunlight and can utilise the anemone's waste products, such as carbon dioxide, to photosynthesise. Without the benefits of zooxanthellae most species of anemone find survival almost impossible.

Reproduction may be by division, 'budding-off' tiny versions of the mother animal or sexually producing

eggs and sperm. Many species have multiplied successfully in captivity under favourable aquarium conditions.

Lodgers

Clownfish are most often pictured in association with anemones, but



Sea Pen,
Cavernularia
obesa.

this is only part of the story as many species are unsuitable and in the case of the Caribbean there are no Clownfish to take advantage of their particular protection. However, some species of Shrimp and Crab do have a similar relationship with those particular anemones.

Sea Pens

These fascinating animals are very closely related to anemones, although distinct in appearance. Whilst only seen in the hobby from time to time many hobbyists will be quite unaware as to just what they are and how to maintain them.

Sea Pens have a tubular body, the upper portion of which is supported by an internal calcium spine, somewhat resembling an old-fashioned writing quill; hence the common title.

Like anemones they possess a foot which enables the animal to burrow and anchor itself safely in the turbulent water it prefers to frequent. Being mostly nocturnal feeders, Sea Pens are rather uninteresting during the day, with only a white, buff, yellow or orange column protruding from the substrate.

As darkness descends, the animal begins to expand and body is covered in a mass of feathery polyps, ready to feed on any water-borne food particles. The most commonly available species is *Cavernularia obesa*.

FLOWERS OF THE SEA ...

Sea Anemones and Sea Pens

Sadly, Sea Pens are not straightforward to keep. They require the same optimum water conditions as anemones and frequent feedings of live Rotifers or Brine Shrimp nauplii; usually during the hours of darkness!

They also require a suitably deep substrate into which they can burrow. Approximately 3in (5cm) of coral sand should be provided. They do very poorly in aquaria without an appropriate substrate.

Sensitivity

Contrary to popular belief anemones are very sensitive and not really that suitable for newcomers to the hobby. They require excellent water conditions and intense lighting of the correct quality.

It is usually best for beginners to gain valuable experience with less sensitive marines, preferably fish-only, before advancing onto the more delicate invertebrates such as anemones.

It is possible that some ailing specimens may be revived by placing

them directly under intense lighting such as metal halide and considerably improving the water conditions.

'Wandering' Anemones

One of the most frustrating aspects of keeping some species of anemone is their inclination to move about the aquarium, generally settling in a totally unsuitable location as far as viewing is concerned.

Primary reasons behind this behaviour include poor water conditions and insufficient lighting. The anemone, by 'wandering', is searching for a more favourable spot in which to settle, where all its requirements will be met.

In the absence of correct conditions the anemone will continue to move about. If an anemone moves into an unfavourable position it is best not to move it.

Moving the anemone will damage its foot no matter how careful you are, and of course may decline its new position only to move back to where it was originally! Sometimes anemones settle on the front viewing glass and in this case a move can be excused.

However, the utmost care must be exercised and the foot eased off the glass very gently. In all cases, remember that these are living

Caribbean Anemone, *Conchylactis gigantea*.



creatures and deserve the best conditions, even though it may not occasionally suit the hobbyist.

Inflation and deflation

As we have seen anemones can be seen simply as bags of water. When fully inflated the water is under slight pressure which gives the animal its form. Oxygen and nutrients are also absorbed from this 'captured' water. After a while the water becomes stale and has to be exchanged for a fresh supply.

To achieve this the anemone deflates for a short period of time, expelling the unwanted liquid and accompanying waste products. A healthy anemone will generally complete the whole process within five to 24 hours.

Treated with respect

Most fish seem to possess an instinctive caution when it comes to anemones but very small fish may fall prey to their stinging tentacles, especially during the hours of darkness. Therefore, it would be unwise to house very small and slow moving fish in the same tank.

Clownfish compatibility

Any anemones falling into the genera *Heteractis* (formerly *Radianthus*), *Anthopsis* and *Stoichactis* are suitable. These are all commonly available to the hobbyist. *Condylactis* and *Pachycerianthus* species should be avoided as far as Clownfish are concerned being exclusive to the Caribbean where there are no Clownfish; they are best kept in an invertebrate-only tank because of their highly predatory natures.

Clownfish often require a 'settling-in' period whereby they adapt to a new anemone. In the process they may get stung or even consumed by the anemone.

Undesirable anemones

Triffid, Glass or Rock Anemones (*Aiptasia* sp.) can present a real nuisance to the marine aquarist. These small 1-2in (2.5-5cm), brownish anemones can quickly multiply into plague proportions and will ensnare any small fish that gets

too close. They can also be very difficult to eradicate.

Danger to humans

Touching most healthy anemones can produce a slight sticky, stinging sensation, or even a rash, depending on the species. However, some people may be allergic to the poison and a reaction may take place. This usually takes the form of a rapidly spreading rash, or in rare cases anaphylactic shock (complete collapse of the respiratory system). Both require immediate hospital attention.

Try not to let anemones sting on sensitive areas of the skin, such as the forearms or backs of hands. Carpet anemones (*Stoichactis* sp.), *Condylactis* sp. and Tube Anemones (*Pachycerianthus* sp.) all possess ferocious stings and should not be touched with bare skin if at all possible.

Heteractis species must also not be ignored as these too can distress sensitive humans. If accidentally stung rinse the wound with vinegar or alcohol and then apply a paste of equal parts sodium bicarbonate and water. Once the pain begins to subside, or the paste dries out, apply a dusting of talcum powder or papain (which is a meat tenderiser used in barbeque cooking) as this has an ingredient that can neutralise venom.

This treatment can also be used to relieve the pain from the stings of venomous fish.

Buying anemones

If an anemone is attached to a rock, rather than remove it and risk damage, purchase the rock as well if practicable. Never buy anemones that are very pale or white and have obviously lost their symbiotic algae. Refuse anemones that are unattached and rolling about the stock tank.

Feeding

A healthy anemone can be fed small pieces of appropriate food once each week to keep it in good condition. Suitable foods include Lancefish, Squid, Cockle and Mussel. Small pieces should be lightly pressed into the tentacles and never forced into the mouth as this will cause serious damage.

If food is rejected remove it and do not try again for another week. Many anemones will remain perfectly

healthy without such gross feeding, taking adequate nutrition from their zooxanthellae exclusively.

In addition where fish are kept in the same tank the juices from the frozen fish food often proves sufficient to keep an anemone healthy. Nuisance anemones, such as *Aiptasia* sp., must not be fed if they are to be kept under control; gross feeding only encourages rapid multiplication.

Health

The most common ailment is for anemones to go white, shrink and eventually die. This can be due to several factors including lack of light, poor water quality, or lighting in the wrong colour spectrum.

As we have seen anemones possess a symbiotic algae within their tissues and as this dies the anemone loses its colour and shrinks in response to a lack of nutrients and oxygen usually supplied by the algae.

Once the process of degeneration has begun the anemone may lose its power to attach and roll about the aquarium. Death usually follows soon after. It would be fair to say that this scenario is much more likely to happen with the Clownfish-types (eg. *Heteractis* spp), rather than the hardier Caribbean species.

Once an anemone starts to break up and disintegrate it should be removed from the aquarium immediately, thus avoiding massive pollution.

Tank and water conditions

Minimum tank size: 91 litres, 20 gallons net

Ammonia & nitrite: Zero

pH: 8.1-8.3

Temperature: 75-79°F (24-26°C)

Nitrate: Less than 10ppm

(preferably zero)

Specific Gravity: 1.022-1.025

Redox Potential: 350-450mv

Water changes: Fifteen to 25 per cent every two weeks using high quality, filtered water

Water circulation: Moderate to brisk

Lighting: Intense, as supplied by daylight fluorescent tubes or metal halide lamps.

Efficient protein skimming and activated carbon filtration should be regarded as standard.

Visit Nick Dakin's website at:
<http://www.nickd.clara.net>

Goldfish Me

A LOOK BACK AT SOME OF THE YEAR'S EVENTS

Visiting three major Goldfish events during the year made an interesting change from the norm of tropical (well, mixed

really) Open Shows.

As with any specialised show one gets really 'locked in' to the subject matter — everyone's talking about the same thing! With Goldfish, particularly, the accent is on breeding and, contrary to what one might expect, the mysteries are there to be solved with the successful only too willing to pass on their experience.

The fruits of the breeders' labours are usually aplenty, filling the auction tables with lots (well, there's a pun if ever you needed one!) of excellent quality stock. These are well and

truly scrutinised before the bidding starts and here it's down to tactics — do you leap in with a pre-emptive bid to secure your wanted fish (only to see further lots of similar fishes go for much less) or do you sweat it out as the prices inexorably rise?

Whatever course of action you decide on the chances are that you will leave the auction with a quality purchase and, if you take full advantage of those present, a complete run-down on the fish's 'pedigree' and care, too.

All this auction excitement takes place whilst judging is in progress and then it's time to see if the successful vendors in the auction have been just as successful on the show bench.

If you haven't been to a Goldfish Show then do take the time to do so (or visit any other specialist show for that matter). It's a refreshing change to see how others do it and you may well get the urge to join them — you'll certainly learn a lot and make a lot of new friends.

Sit back and relive some of the moments at the Association of

Midland Goldfish Keepers, The Northern Goldfish & Pondkeeper's Society and the Goldfish Society of Great Britain shows.

Association of Midland Goldfish Keepers

Best in Show: Lionhead, Keith Watters

The Northern Goldfish & Pondkeeper's Society

Best Bristol Shubunkin in Show: Tony Roberts

Best Breeder's Team: Veiltails, Martin Clare

Best Fish in Show: Bristol Shubunkin, Tony Roberts

The Goldfish Society of Great Britain

With 224 entries the judges had plenty to do, which was just as well as so did the auctioneer!

Best in Show/Best Owner Bred Fish: Nacreous Fantail, Ron Duckworth

Best Breeder's: Metallic Fantails, Brian Bates

Best Single Bred Fish: Bristol Shubunkin, Tony Roberts

Best in Show, Lionhead, Midland Goldfish Society Show.

ALL PHOTOGRAPHS: A&P LIBRARY



memories of 1998



Keith Watters receives Best in Show award from Midland Goldfish Society's Jim Cumos.



Getting down to judging at the Midland Goldfish Show.



Contrasting colouration at the Northern Goldfish Show.



Matched pair of Bristol Shubunkins at the Northern Goldfish Show.



Goldfish Society of Great Britain show trophies.



Goldfish Society of Great Britain show auction.

Caught in the Net

Kathy Jinkings logs on for more Internet Fish Information

Between the inland freshwaters and the sea lie a large number of habitats which are neither freshwater nor salt — the brackish water habitats.

These fish are often ignored or lumped in with either their fresh or saltwater brethren, but the brackish water fish deserve attention in their own right.

This month *Caught in the Net* will be looking at some of the strange and beautiful inhabitants of these mixed waters. You can find out exactly what constitutes brackish water in an *Aquaria Central* article at

<http://www.aquariacentral.com/articles/bwater.htm>.

There can be few fishes either stranger or more endearing than the Mudskipper. This is a fish that doesn't believe it is a fish at all, preferring to spend its life out of water on the mud flats.

The first stop on this week's tour is at Richard's Mudskipper (and Brackish Water Goby) site:

<http://www.ozemail.com.au/~thebobo/goby.htm>.

Here you can find out all about the Mudskipper and its kin. There is lots of information here, to please everyone. Whether you just want to know what a Mudskipper is and see pictures, would like to know enough to keep them, or want in-depth scientific information, you will find plenty of interest here.

For those who prefer their fish to stay in the water the Brackish Goby section lists a number of fish. This section is still under development, so is not as complete as the Mudskipper information.

You can see the striking Dragon Goby, *Gobioides broussonetti*, at the Dragon Eel page: <http://sunflower.bio.indiana.edu~sholtzma/fish.html>. Here you won't find a great deal of information about this striking bright purple fish but you will find a collection of photographs. The bright black and yellow Bumblebee Goby is often seen in freshwater aquarium shops and many end up in freshwater tanks. Nonetheless, this is really a brackish species, and will look far better and be healthier in a brackish tank.

You can read all about the Bumblebee and see a photograph in an article from Richard's Fish Tanks, at <http://luff.latrobe.edu.au/~mssrb/bumble.html>.

Pufferfish are often seen in aquarium shops and many of these, like the Bumblebee Goby, end up in unsuitable freshwater (often community) tanks. Most Pufferfish will prefer brackish water and be far healthier and happier. You can find out all about Puffers at the friendly Puffer Stuffpage, at <http://www.frontiernet.net/~akom/puffer.html>.

Written by a Puffer addict, the site is liberally illustrated with both photographs and drawings of Puffers. Clicking on the Ceylon Green Puffer drawing shows an animation, supposedly of swimming. It looks closer to Puffer semaphore but is nonetheless very sweet.

More seriously, you can find a list and brief description of lots of Puffer species, read excerpts from email about Puffers, and a page of tips on providing a home for a Puffer. This page is fun to visit and provides enough information to inspire you to go and buy a good book before buying a Puffer.

The Project Puffer brackish pavilion, at <http://chunkypuff.powersurge.net/projectpuffer/brack2.htm>, offers photographs and brief species information sheets for a variety of brackish Puffers.

For those who want the serious lowdown on Puffers the Puffer Page, at <http://fugu.hgmp.mrc.ac.uk/fugu/pfpp/pf.html>, provides as much in-depth information as anyone is likely to need to know. Gene mapping, taxonomy, morphological adaptations, and toxins are just some of the topics available. For those who like their information with a dose of pictures there is also a page of Puffer photographs and an animation of a Puffer puffing!

If you are now convinced you want a Puffer a visit to Paul Schuman's article, 'Fresh and Brackish Water Puffers Aren't For Everyone' at <http://www.geocities.com/>

[Heartland/Meadows/3533/puffers.htm](http://www.heartlandmeadows.com/3533/puffers.htm) is recommended for a dose of common sense before you rush off to the shop, cash in hand.

Another fascinating fish for the brackish aquarium is the Archerfish. It looks like a fish and swims in the water but the Archerfish's odium is in its feeding methods — in order to capture flies above the water it aims and fires a jet of water with remarkable accuracy, to knock the insects into the water where it can eat them.

You can not only find out about the Archerfish at Rainbowfish Online: <http://www.ecn.net.au/~atappin/Brackish.htm>, but a variety of other brackish species as well. The beautiful Scats and the silver *Monodactylus* are also described here.

Mollies are common aquarium fish and adjustable to a wide variety of aquarium conditions. It would appear that they do prefer brackish conditions, though, and for truly splendid Mollies a brackish tank would be a good idea. You can see pictures and read a little about the spectacular Sailfin Molly at <http://www.feedteach.com.my/gsfmolly.html> and at <http://www.amads.com/mollies.htm>.

Lots more brackish species of fish are briefly described at *Aquaria Central*, <http://www.aquariacentral.com/fishinfo/brackish/>.

If you are convinced you would like to set up a brackish tank there are a variety of articles and sites to help you go about it. A good place to start is at the Brackish Water FAQ, <http://www.aquariacentral.com/faqs/brackish/>. Here you can read introductory information, find out about setting up a tank, and learn even more about the many species of fish that could live in it.

On the JAWS site the article 'Why Not Give The Brackish Aquarium A Try?' from the Columbus area fish enthusiasts, at <http://www.badgerstate.com/JAWS/faqs/brackish.htm>, offers advice and help. More information on setting up your

brackish tank can be found at the *Tropical Fish Digest*, <http://www.trakkerinc.com/tropfish/1f01/1f0102.htm>.

Aquarium Fish online offer a couple of articles of interest, including a Brackish Aquaria FAQ at <http://www.aimalnetwork.com/fish/library/qa/fresh/f8.asp>, and Caring for Monos at <http://www.aimalnetwork.com/fish/library/qa/fresh/f11.asp>.

Plants for brackish aquaria are not that easy to find — apart from the stubborn Java Fern most freshwater plants do not do well in saltwater. Mangroves, however, are natural residents of brackish water.

At <http://saltaquarium.miningco.com/msubmangroves.htm> you can read all about Mangroves (hopefully, small ones) for your tank, and how they can assist with filtration. This page doesn't have any pictures but it does have lots of information and links.

At Mike Hodo's Mangroves page, <http://saltaquarium.miningco.com/msubmangroves.htm>, you can see pictures of his new seedlings and learn how he went about planting them.

If you are seriously interested in brackish aquaria and would like to swap letters and information with other enthusiasts then the Brackish Water Mailing List is for you.

To join send subscribe brackish in the body of a message to listmaster@saturn.law.missouri.edu.

NEXT MONTH WE WILL BE TAKING A LOOK AT ONLINE SHOPPING

Kathy Jinkings
(British Aquatic Resource Centre — <http://www.cfkc.demon.co.uk>)
(AquaSource International — <http://www.aquasource.demon.co.uk>)



FROGS & Friends

By BOB and VAL DAVIES



ALL I WANT FOR CHRISTMAS?

We have often advocated buying equipment/books for Christmas presents rather than livestock.

Along with many others we have pondered on or been asked to advise on suitable materials for vivarium construction as those traditionally-used tend to pose problems.

Ease of cleaning is a prime requisite: although glass fits this category it is heavy and brittle and needs considerable skill for DIY construction.

Plywood and melamine-veneered chipboard are commonly used but they are not problem-free. The latter is easy to clean but is susceptible to moisture — all joints must be sealed with silicone — even so the sealant eventually comes unstuck. If frequently wetted then the surface soon 'bubbles up'.

Plywood, likewise, is affected by moisture, and is difficult to clean even when painted or varnished. Fibreglass, popular in the USA, is seamless, long-lasting and easily cleanable but the few that have been on sale here have been expensive.

At the I.H.S. Reptile Fair in September we spotted a new line — vivaria in UPVC, as used for windows and doors. Produced by 'Proviv' of Marple, Cheshire (Tel/Fax: 0161 427 0399) they would seem to



A 'Proviv' vivarium — smart, durable, lightweight, easy to clean — the answer to a herpetologist's prayer.

PHOTOGRAPH: BOB & VAL DAVIES

have many advantages over traditional materials and although more expensive should be extremely durable, thus giving them a better resale value if the creature outgrows its original accommodation.

They are designed to stack for multiple set-ups although individual models are available, some with a woodgrain finish. Standard sizes are

available but if necessary they can be tailor-made to suit individual requirements.

A further advantage is the space underneath which can hold a heat mat to provide underfloor heating safely without risk of animals burning themselves. Included are fittings for basking lights, fluorescent tubes and ventilation panels.

A friend who has what is probably the largest collection of Boas in this country has been so impressed with them that he has redesigned his housing to enable him to use 'Proviv' vivaria for all his creatures — over 100 Boas. His assistant is more than pleased with the way they facilitate cleaning. These vivaria should take reptile and amphibian-keeping into the next century.

LOOK BEFORE YOU LEAP!

In previous December issues we have advised readers not to buy live animals for Christmas unless the intended recipient possesses the necessary

equipment and knowledge to maintain the animal properly.

The suitability (or otherwise) of certain reptiles has also been discussed at various times; in particular Green Iguanas. Apart from their dietary needs and large quarters there can be the problem of attacks by large (usually male) Iguanas.

Although there have been numerous written reports an American reptile magazine recently showed actual pictures of a woman keeper who had been attacked by her 'pet', suffering severe injuries around the bridge of her nose.

The injury required 30 stitches and plastic surgery to the tune of \$14,000. Had the bite been a little to either side of her nose it is likely that eye damage would

have occurred.

The keeper had evidently been away for two weeks (a friend caring for her animals) and was attacked on her return when she let the Iguana out for exercise.

A similar attack happened to a friend of ours after she had been confined to bed for some days due to illness. The culprit in the American attack was put down and the frightened owner now wants to find homes for her other two (4/5ft long) specimens — a sad end to what had previously been an enjoyable hobby.

Asian countries and many Chinese tourists would visit Thailand to eat them but due to current Asian economic problems many tourists can no longer afford the trip.

This seems to have led to smuggling reptiles into China. Thai customs recently intercepted over 2,000 live snakes and turtles at Bangkok Airport. A previous shipment was found to contain 4,000 live snakes whilst a consignment seized in Indonesia contained 1,200 live reptiles.

In all cases China was the intended destination.

We would like to take this opportunity to wish all readers and A&P staff a Merry Christmas and a Happy New Year.

IN THE NEWS

Reptiles have long been popular for food and medicine in

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HORRID BY NAME — HORRID BY NATURE?

Heloderma horridum sounds a suitable name for a cruel stepmother or a wicked witch in a fairy tale but is actually the scientific name for one of the only two venomous lizards.

Venom as a means of killing prey and defence is common in snakes but among lizards only the Mexican Beaded Lizard (*H. horridum*) from Western Mexico and the Gila Monster (*H. suspectum*) from South West USA and Northern Mexico possess venom glands located in the posterior margin of the jaws.

These closely-related lizards are similar in appearance, distinguished mainly by their differing size. Both are stout, short-legged creatures with a rough 'beaded' skin — *H. horridum* at 32in (80cm) is longer than the 24in (60cm) Gila Monster.

Colouration consists of yellowish, orange, even pink patches or spots on a dark background — possibly aposematic (warning colouration) denoting their venomous properties. The venom is delivered by flowing along a groove inside the jaws and then along grooves in the teeth which means that the lizard must chew to break the victim's skin, allowing the venom to enter.

The gums are retracted to produce a deeper bite — some 9/10mm. Since they normally prey on relatively defenceless creatures such as nestling birds and mammals, birds' eggs and even carrion it had been suggested that the venom is for defensive purposes only.

Are they then as 'horrid' as the name suggests? Are they really 'monsters'? Humans have tended to loathe or fear any creatures which



Mexican Beaded Lizard — horrid by nature only if molested.

PHOTOGRAPH: BOB & VAL DAVIES

possess venom; snakes and spiders, for instance, and many myths have grown up surrounding *Heloderma*; one being that they will not release a victim until sunset.

Certainly the broad head delivers a powerful bite and to introduce the venom the creature must hang on but in actual fact they are not aggressive unless molested. They tend to be secretive, mainly crepuscular/nocturnal, preferring to avoid

humans. They are generally slow-moving but can react quickly when disturbed.

According to reports they do not possess sufficient venom to kill a human. Nevertheless, the bite is exceedingly painful but the venom lacks the anti-coagulant properties of snakebite; instead it attacks the nervous system and could possibly affect the respiratory system and might, therefore, under certain circumstances, be lethal especially if the victim is under the influence of alcohol which, it is claimed, increases its toxic effects.

Legal specimens are not likely to be available in the hobby, they are now protected (CITES Appendix 1). Although they have frequently been bred by keepers in the USA there seems to be only one report of (private) captive-breeding of Gila Monsters here.

They are said to make good vivarium subjects being relatively easy to cater for and have lived for around 20 years in captivity. Both species lay eggs (three to 12) although it is thought that several clutches per year is possible as females have been found to have as many as 30 eggs in the oviducts.

FACT FILE

LIFE UNDERGROUND

During the course of evolution many reptiles and amphibians have adapted to living underground.

Some are truly fossorial (burrowing) spending practically all of the time underground.

Certain others may emerge at night to feed, others only at breeding time. Heavy rain can force subterranean dwellers to the surface; this may be the only time they can be observed.

Consequently, many such species are poorly known. Some find it advantageous to spend at least part of the time under the surface for a number of reasons; they can move about in relative safety, hidden from predators.

Foods such as insect larvae may be sheltering in the soil. Insects and other food items on the surface can be caught unawares by sudden emergence from below. In addition burrowing can provide shelter from the heat, warmth at night and moisture in dry conditions.

Consequently species which pursue such lifestyles tend to have various



'Caught in the act' — a Sandfish diving for cover.

PHOTOGRAPH: BOB & VAL DAVIES

adaptations to facilitate burrowing. These are many and varied and include 'spades' on the hind-limbs (Spadefoot Toads); slender bodies and reduced or absent limbs (Slow-worms); smooth, highly-polished scales (many Skinks) and in some cases a head which is shaped to assist movement under the surface.

Some lizards bury themselves by means of an alternating sideways shuffle (Horned Toad lizard). A good example of adaptation to

concealed movement is the Sandfish (*Scincus scincus*) from North Africa and the Middle East. Once common in the hobby they are less frequently seen these days but are occasionally available. The common name comes from their habit of sand 'swimming'.

The rather stout, smooth-scaled, cylindrical body and relatively small limbs (common Skink features) assist this mode of locomotion. In addition the chisel-shaped snout adds to the streamlined effect.

Movement in loose sand is rapid; when disturbed above ground they can quickly disappear by diving into the sand. A good depth, at least 4in (10cm) of loose, non-dusty sand in a good-sized vivarium is needed for this species to feel at home.

Tarquin looks at things from his side of the glass

PHOTOGRAPH BY CHRIS SPENCER

New Tank

Syndrome



Firstly, I would like to say 'Hello' to Gordon, one of my many, many fans out there. They (her and him, I mean) went to that show in Yorkshire; oh, it was so funny! It seems she went up to someone and introduced herself, thinking she was a famous writer. They hadn't a clue who she was and weren't really interested in talking to her, but once she told them she was my mum, they knew who I was. He doesn't like being called my dad and still insists on calling me Horace — stupid man!

Anyway, back to Gordon; he wrote to Mr Mills saying how wonderful I am, asking for more from that Pompous Pink Kisser — what a wonderful compliment! One of the problems with being famous is that I've obviously reached the stage where I'm going to start having problems with the Papparazzi. No matter how carefully you consider your answer to their questions they still misquote you.

I would, therefore, like to ask Mr Mills to pay more attention in future to what I say: I categorically (see, I can use big words too) state that I did not say what he claimed I said. I don't know what those words 'Narcissism' and 'obsession' mean. I know there is a book in which you can look to see what big words mean but, as I haven't yet learned all my letters, I can't do that. Now you may wonder

why I don't ask her to do it for me? The answer is because she can't spell! She's always shouting at him when he comes home because the word she wanted wasn't in that stupid book, you know, words like 'excitement'. She spent all day yesterday going through the bit with words beginning with 'X' time and time again, but couldn't find it nowhere. Anyway, that's enough of that silly old dear.

Well, not really. You know what she's gone and done? We've had some mighty serious changes in our tank — and not for the better, I can tell you. At that Yorkshire show, she bought what he calls 'A bloody expensive, useless piece of rock'. I bet they haggled to get it cheaper, they're really tight, you know. Anyway, this 'thing' is something called a waterfall (so she said). It's got white sand or something in the bottom and it's connected to one of them noisy air-pumps. Being a mere fish, there are a few things I don't understand? Firstly, he is always complaining about the noise in the living room from the filters, so why go out and buy something that needs a noisy pump to make it work? That aside, she knows that too much noise brings on my migraine.

The first thing I knew about the changes was when she took the 'holey' rock out of the tank — if you recall, that was the one I got my head stuck in a

while back. Well, when she took it out I thought 'At long last, they're being kind'. I've been a bit nervous of going near it since getting stuck and there I was thinking for once she was being kind to me. Wrong! She replaced it with this monstrosity, which didn't only upset me but upset the stupid Botia, because that was where he hid.

He was another of their silly ideas; you know we only have plastic plants in our tank (yes, we all know Kissers like to browse on real plants), but they used to accuse me of pulling them up when all the time it were them snails that were eating them. So, in order to eradicate (that means get rid of) the snails, they got this Botia thingy. What a waste of time and money he was! He didn't do anything to the snails, just hid behind the 'holey' rock apart from coming out to chase me from time to time.

Then, a few weeks ago, a friend was also having trouble with snails so she said he could have the Botia because they eat snails. What she didn't tell him was, after all this time, she had just discovered this medicine that works better. They have a raffle at her club and one night she won this stuff but because she didn't know what it was she was putting it back into the raffle when this person called Sue Guinness & Black (big-headed little madam she is — because she works in a fish shop she thinks she knows everything

— she said I was silly!) said it would get rid of snails, so she kept it. One would think when one is a writer one would know about these things, wouldn't one!

Sorry, I digress. Anyhow, this new thing works on the principle that it sucks the sand up the back then it falls down the front and is caught in the bottom. Stupid waste of time. Now as this has replaced our 'holey' rock the poor Botia had nowhere to hide, so tried to get in the bottom bit which was full of white sand. Oh, you should have been there! He couldn't fit so he started thrashing about and covered us all in sand. She was going mad on the other side of the glass, the more she shouted and banged on the glass the more he tried to hide. I was hoping he would get stuck, it would have been really funny if they had to smash their expensive rock to get him out. In the end, she turned the pump on and he came out — so did most of the sand. It looked really pathetic I can tell you.

Hubby comes home and starts complaining about what a waste of money it was and how stupid it looked with two grains of sand floating about. She said it was the dry season, which I think was supposed to be a joke, not that he laughed. While they were arguing the fella who said he would have the Botia walked past the house and she hammered on the window so hard I thought she would bring the house down.

It appears this fella should have called back weeks ago, when he first asked for advice. What she doesn't realise is he probably didn't come back because there we are with a tankful of snails. A Botia

that only comes out of hiding to chase me there's her telling him this is just what he wants to get rid of them! However, she's a formidable, selfish person so once she got the poor fella in the house he didn't have no choice but to take the Botia, poor thing — not that I was sorry to see him go. After that the thing was switched off unless friends called. Luckily they only have two friends so it isn't much of a problem.

However, in the meantime she'd been sat in 'his' chair and noticed the top of the rock looked like a face. So now whenever anyone calls, even if it's only the gas man to read the meter, they're put in the chair and asked what they can see. One friend said 'a fish tank!' Oh, it was so funny.

That isn't the end, oh no. As you know, I'm very talented, I do tricks; not quite as clever as that Free Willy thingy but then I don't intend jumping over no wall — I'd probably end up in the cat's dinner instead of the sea. One of the things she has me doing during our quality 'play time' is, I swim to the front of the glass and wag my tail making a big splash.

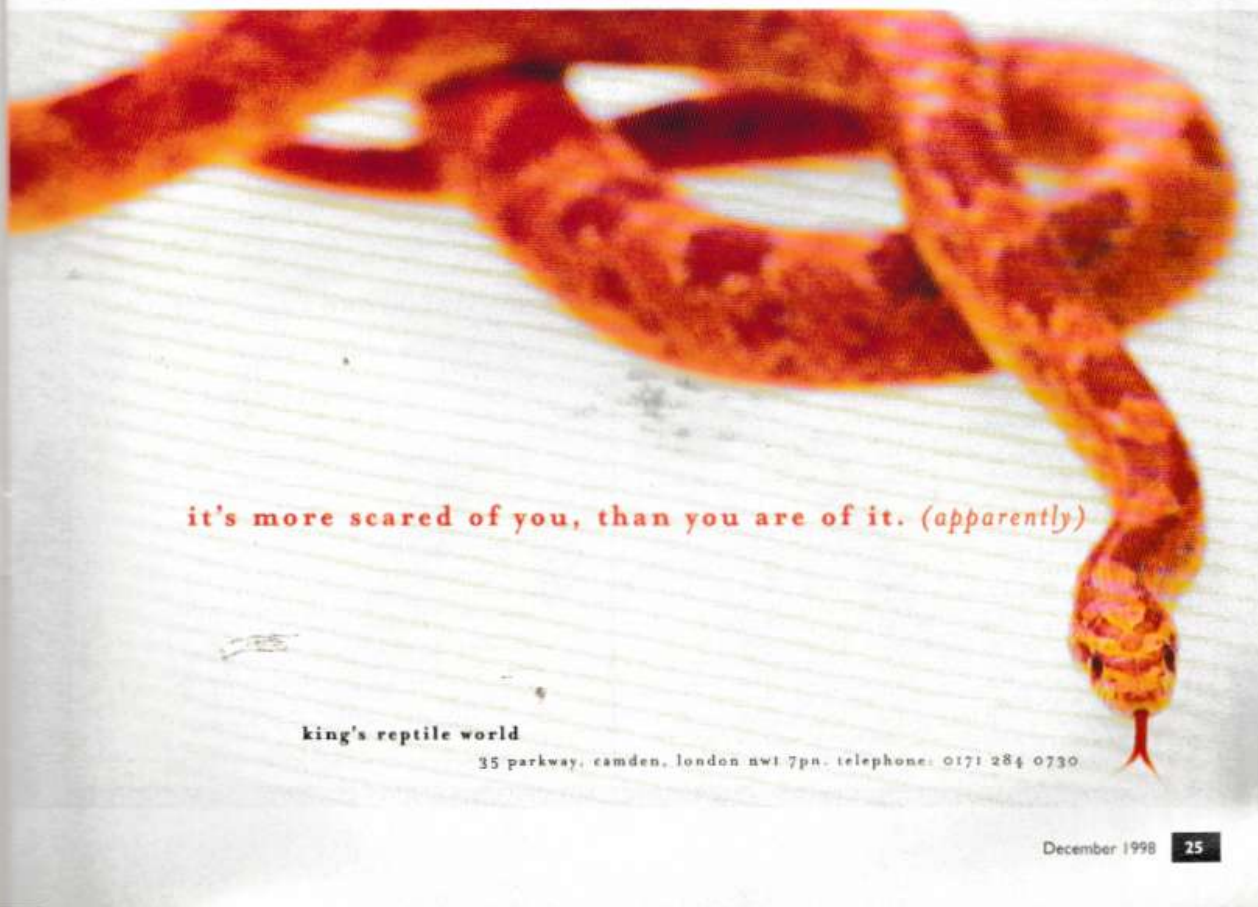
However, the other evening I did it in the wrong place; instead of in the corner where I should do it, I did it in the middle and my tail touched the rock and scattered the remaining grains of sand all over the tank. She went mad and started shouting at me; he started on about 'An expensive thing that. Without sand it doesn't even qualify as an ornament no more!' What he doesn't know is that the nice man from Jewell gave her extra sand because she said she would do a write-up

on it. If this is it, everyone will be asking for their money back!

Anyway, she decided to put more sand in, even though he kept saying she would have to wait until she did a water change and dropped the water level. But, as usual, she wouldn't listen and had to do it there and then and tried to pour the sand from the rather large bag into the bottom of the rock. She did very well; the only problem was she didn't want to put all the sand in, so she ended up with half a bag of sand and water which she tried to pour back into the tank without losing any sand. It nearly worked.

When she switched on the pump you should have seen the mess: she only gone and overfilled it. There was sand all over the place! We were all choking at the top of the tank whilst she tried to spoon some out. The sand kept spilling on to the rock and because he doesn't like wasting money he kept brushing it back in. Now, whenever a hand comes into the tank I think it's come to play with me so I swim around it. This one pushed me up into the corner and I think this is a great game, so I chased it back. Then he started shouting that I'm a big daft thing who is always in the way whenever he's trying to do anything. In the end, he got annoyed... and turned it off!

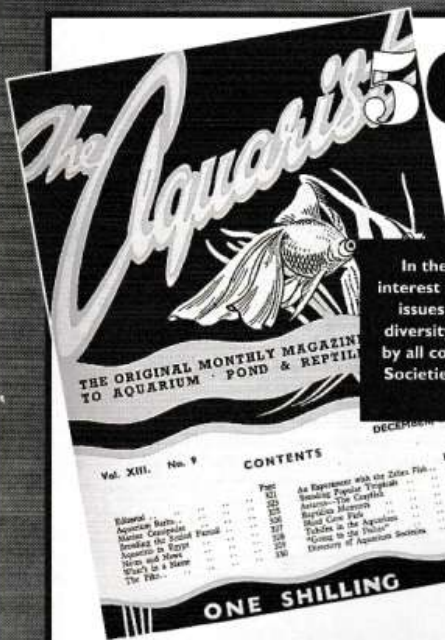
Well, now the silly old dear has finally got Mount Niagara working properly and it looks very nice. So, apart from him constantly complaining about wasting money, my tank is lovely and peaceful. I just hope the fella who has the Botia doesn't bring it back when he discovers it doesn't eat his snails.



it's more scared of you, than you are of it. (apparently)

king's reptile world

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50 Years Ago ...

As recounted by Editor Dick Mills

In the period immediately after the war the increase of interest in all things aquatic was rapid. Looking through past issues of A&P makes interesting reading not only for the diversity of subjects raised but for the apparent enthusiasm by all contributors whether they be authors, reporters from Societies or letters from readers. December 1948 threw up this selection of topics ...

The Goldfish Society of Great Britain held its first Open Assembly at 7.30pm on December 17 1948 in the common room at St Martin's School of Art, adjoining the Tatler Theatre in Charing Cross Road, London. Two talks were given, one by Captain Betts, Chairman and Founder of the Society, and another by R. Affleck. *Aquarist & Pondkeeper* magazine offers its heartiest congratulations to the society on achieving the Golden Jubilee milestone in its history and looks forward to receiving if not a slice of birthday cake at least continuing good news from this long established specialist society. Other societies about to reach this Golden Jubilee achievement are Hendon A.S., whose formation was announced this month in 1948, and Kings Lynn A.S., whose first meeting was held in January 1949.

Good news of another form brought problems to Kingston & District Aquarist Society who were forced to find an alternative venue for their meetings ... because of an increase in membership.

A rumour going around at this time was that aquarium immersion heaters were not liable for purchase tax. This was a complicated state of affairs as the Board of Trade made them subject to 100 per cent tax when the

manufacturer's gross turnover exceeded £500 per annum regardless of the fact that this turnover included exports and charges for other goods, where made. It was admitted, after discussions at ministerial level, that whilst the present system could be seen to be reacting unfairly on certain firms in the national interest it was not intended to make any alteration. This apparently explained why some manufacturers' products were subject to this levy and not others.

K. A. Tanswell wrote in enquiring if his spawning of a dozen young fighting fish which completely lacked pelvic (ventral) fins was unusual. He also noted that the male parent lacked these fins whereas the female (mother) had a full complement of fins. (Perhaps a basic knowledge of genetics would have answered his question and saved him the cost of a postage stamp!)

Eric Hardy's *Naturalist's Notebook* column has delighted A&P readers for many years and 50 years ago saw the publication of an article entitled 'Reptilian Monsters' in which were featured a two-headed Water-Snake (*Natrix tessellata*) and a double-headed young turtle found near New York. Incidentally, the two-headed Water-Snake was re-featured in Eric's column in the

before reaching the lake where the fish were located. No further details were given.

A. G. Field related the story of a coldwater aquarium plagued by oxygen deficiency. Despite extra aeration and exposure to sunshine the fish, Bristol Shubunkins, were still reluctant to leave the surface and were therefore transferred to other quarters, where they recovered rapidly and began eating like the proverbial horse. Subsequent examination of the previous tank found that the substrate had become entirely taken over by *Tubifex* worms whose sheer numbers had been grabbing the oxygen from the water at the expense of the fishes' requirements.

Still with coldwater topics ... that doyen of the coldwater scene, Arthur Boarder, managed to prove himself wrong when his previous assertion that a Scaled Fantail had no earthly chance of winning against Vels, Moors, etc, failed to hold true. Arthur's Scaled Fantails took Best in Show at one show, his youngsters Best Fancy Goldfish at another, whilst a previously unexhibited breeder taken from his pond triumphed with Best Coldwater Fish in Show at a third event!

December 1996 issue of A&P.

A marine topic might have been considered rare way back in 1948 for sure, but even more so when the subject matter was marine centipedes! The species, belonging to the Order Geophilomorpha, were *Scolioplanes maritimus* and *Hydroschendyla submarina*. The author, J. L. Cloudley-Thompson, of the Department of Zoology, Cambridge, appealed to readers to send him preserved (or preferably live) specimens of any marine centipedes they may encounter.

A species of blind fish was reported to have been discovered in the Padirac Cave in Southern France. M. Guy de Lavour apparently descended 30ft into the cave in a diving suit before penetrating another 90ft of underwater gallery

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A to Z of plants

By
DICK MILLS

PHOTOGRAPH BY
PETER ETCHHELLS

WXYZ IS FOR ...?

We have reached the end of our alphabetical progress through our selection from the plant world of commonly available species suitable for the aquarium, pond and bog garden. Without exception every species described in the series has offered both visual attraction as well as alternative services to the aquatic world such as keeping the water conditions in better shape or, as in the case of pondside plants, providing a shelter for visiting animals, amphibians and colourful insects. As we moved through the lists there were some awkward instances that almost refused to deliver a species with the pertinent initial letter without resorting to common names or descriptive groupings. As we hit the 'Scrabble-redundant' letters at the end of our journey it looked as though we'd run out of species, but the very final species had both a convenience and a surprise for us, being indeed a 'Z' with its scientific name but with an 'A' for its common name — so, following nature's example, we have an end followed by a new beginning. For the record, we also came up with *Watsonia*, *Yucca* (pushing our luck a bit!), *Zizania*, *Zanichella* and *Zosterella* (a synonym for *Heteranthera*), but an 'X' proved to be completely elusive.

W is for *Wolffia*

Wolffia arrhiza (L.) Wimmer — Dwarf Duckweed

Originally named by Linnaeus as *Lemna arrhiza* in 1771, it was moved to the genus *Wolffia*, after the German physician, J. F.



Wolff, by Wimmer in 1857.

Description: As its common name suggests the leaf form of this floating, rootless plant is similar that of Duckweed but is only around 1mm in size.

Distribution: Worldwide.

Cultivation and Propagation: With its Lemnaceae Family associations it shares the same rapidity of growth (almost to nuisance levels) as Common Duckweed so propagation is hardly a problem although it actually reproduces by daughter plants. Requires strong light.

Other Species: There are several other species, all of which are difficult to differentiate between.

Z is for *Zantedeschia*

Zantedeschia aethiopica — Arum Lily, Calla Lily (see photograph)

Description: The distinctive white 'flower' is like an upturned trumpet but actually the tiny yellow real flower is partially hidden inside the outer waxy spathe. The glossy, dark green leaves are arrow- or heart-shaped held on stiff stalks to a height of about 60cm.

Distribution: South Africa.

Cultivation and Propagation: Can be grown in moist soil or in shallow water at the pondside. Full sun and/or partial shade can be tolerated. During winter months the crowns should be covered with a mulch of straw or similar material for protection against frost. Specimens planted in water depth of a few inches should survive but could be stored indoors if conditions are really harsh. Propagation is by physical division of the stock, generally best done in spring. There are several varieties, of which 'Crowborough' is a popular hardy example.



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Out & About

Yorkshire Aquarists Festival

Dick Mills
reports

PHOTOGRAPHS BY
NICK FLETCHER

They say it's always better to arrive late than not at all, so with sincere apologies for such a lengthy delay here are some memories of the Yorkshire Aquarists Festival which took place in the dim-distant mists of time way back in ... March!

This year's festival was to take on a slightly different look, in respect of society participation especially with regard to tableaux.

Sadly, the building expense of imaginative tableaux of yesteryear is beyond most societies but the 'carcasses' have remained to stage the fish and furnished aquarium entries.

For this year, then, the YAF committee took the decision to begin a phasing out of the tableaux in favour of more society-related information displays

but still making provision for exhibiting fishes.

Thinking about it how many new members of societies in the past were attached to the society by its ability to create a World War II tank, a wild west stagecoach or a Mississippi riverboat?

This decision was bound to create discussion amongst exhibiting societies, although any

► Fish of Fishes, YAF, 1999,
Paratilapia bleekeri.



society tableaux under construction would still be allowed space.

A pre-show 'grand tour' of the societies by the festival's organisers to explain the reasons for the change understandably met with mixed reactions but, since the show the decision has been hailed as a complete success.

Another feature of the event is the ever-changing staff on the Advice Centre stand. Here, visitors could take a seat and seek out information on whatever fishkeeping problem bothered them — breeding, showing, maintenance, pond societies, and so on.

The advisory staff was provided by hobbyists from the societies on a rotational basis and this face-to-face with 'people just like me' seemed to promote confidence in the questioning public, who were certain of getting practical answers from those who were keeping fish under exactly the same local conditions as themselves.

As usual the trade stands were busy and there was an extra excitement for the youngsters — the thrill of ferret racing!

The course was a series of parallel tube-tracks along which the furry creatures dashed, urged on by shrieks of encouragement from the watching audience.

One advantage of this retrospective looked at YAF, it could be said that it was a truly unique show out of this year's major aquatic events — it was the only one at which Tony Tyson didn't win the top honours!

The prestigious Fish of Fishes' award went to Kevin and Janet Rodway with their *Paratilapia bleekeri* which presented itself immaculately over the period of the festival.

By now plans are already in hand for next year's event — to be held at Doncaster Racecourse on March 20/21 1999. We have made a note in our diary to not only be there but to cover it a little earlier in the year — but maybe this late reminder of YAF 1998 could be taken as an early advertisement for YAF 1999!



▲ TOP OF PAGE
All the fun of ferret racing!

ABOVE Bargain hunters scour the tanks.

LEFT Kevin and Janet Rodway receive their Fish of Fishes' Trophy from A&P's John Young and Joan Haines.

Annual Index

January-December 1998

A-Z PLANTS

Ludwigia (January, 51)
 Lysichiton (February, 17)
 Microsorium (March, 34)
 Nymphaea (April, 61)
 Oxygenators (May, 56)
 Pulmonaria (June, 23)
 Rotala (July, 38)
 Stratiotes (August, 44)
 Trapa (September, 66)
 Uvularia, Vallisneria
 (October, 41)
 Vesicularia (November, 67)
 Wolffia, Zantedeschia
 (December, 28)

BACK TO BASICS

Cherry Barb (March, 64)
 Hatchetfish (June, 56)
 Rams (September, 6)
 Dwarf Gourami (December,
 6)

KOI EXTRA SUPPLEMENTS

March: Why Keep Koï?
 Take-off Checks
 Don't Stop the Colours
 Running
 Spring Feeding
 April: Your First Koi
 Above-ground Filtration
 Systems
 Sitting in Judgement
 Bacterial Diseases in Koi
 May: Keeping Them happy
 Are Koi Compatible?
 In-ground Filtration Systems
 Hearing in Koi
 Shirley Aquatics Weekend
 June: Seasonal Care
 Why Did She Die?

All Roads Lead to Your pond
 Breeding Koi
 Out & About: Karobar Koi
 July: Nobody Told Me About
 This! Part 1
 Koi and Plants
 Feeding Koi
 Koi Toys
 August: Nobody Told Me
 About This! Part 2
 Living in the Big league
 Koi Keeping — The Friendly
 Hobby
 Preparing Koi for the Show

SUPPLEMENTS

OVERVIEW OF TROPICAL
 FISHES (February)
 Community Tropicals for
 Beginners
 Kaleidoscope of Killfish
 Discovering Discus
 Difficult to Keep Marines
 COLDWATER FISHKEEPING
 (April)
 Coldwater Magic
 Nordic Aquarium Critters
 Unknown Quantities
 Minnows with Attitude
 GUIDE TO WATER
 GARDENING (July)
 Tumbling Waters
 Dirt Busters!
 Water Lilies
 BEGINNING WITH
 MARINES (December)
 Anyone Can Keep Marines
 Rockpooling in Oporto
 Fish for Beginners
 Marines in a Pond
 Marine Jargon Explained

REGULARS

Ask *AGP* (January, 16;
 February, 63; March, 44;
 May, 32; July, 68; August,
 49; September, 67;
 October, 24; November,
 45; December, 62)
 Buy Lines (February, March,
 April, 63; May, 75; June,
 71; July, 50; August, 67;
 September, 69; October,
 37; November, 60;
 December, 70)
 Caught in the Net (January,
 50; February, 30; March,
 52; April, 16; May, 60;
 June, 22; July, 56; August,
 60; September, 20;
 October, 76; November,
 66; December, 20)
 Famous Faces (January, 54;
 February, 77; March, 38;
 April, 22; May, 70; June,
 76; July, 67; August, 66;
 September, 68; October,
 48; November, 41;
 December, 76)
 Fifty Years Ago (January, 26;
 February, 16; March, 46;
 April, 30; May, 40; June,
 74; July, 49; August, 56;
 September, 48; October,
 47; November, 50;
 December, 26)
 Frogs & Friends (January, 24;
 February, 60; March, 40;
 April, 28; May, 54; June,
 44; July, 28; August, 22;
 September, 58; October,
 26; November, 22;
 December, 22)
 Fry Talk (January, 46;
 February, 55; March, 69;
 April, 66; July, 27)
 Koi Calendar (January, 22;
 February, 28; March, 42;
 April, 60; May, 46; June,
 54; July, 70; August, 70;
 September, 23; October,
 75; November, 46;
 December, 30)
 Meet the Societies (January,
 70; February, 69; March,
 59; April, 59; May, 72;
 June, 73; July, 66; August,
 69; September, 72;
 October, 74; November,
 76; December, 78)
 Newsdesk (January, 55;
 February, March, 71; April,
 67; May, 74; July, 66;
 August, 68; September, 70;
 October, 72; November,

75; December, 64)
 Shore Watch (January, 72;
 February, 64; March, 54;
 April, 68; May, 30; June,
 52; July, 26; August, 58;
 September, 60; October,
 64; November, 64;
 December, 56)
 Society World (January, 81;
 February, 81; March, 80;
 April, 78; May, 81; June,
 81; July, 76; August, 76;
 September, 72; October,
 70; November, 80;
 December, 82)

ARTICLES

A
 Are You Killing your Fish?
 (May, 6)
 Autumn Almanack (October,
 10)

B
 Back-up Power (January, 36)
 Beauty And The Beast
 (January, 32)
 Birdkeeping, Aquarist Style
 (April, 12)
 Birth of a New product
 (November, 54)
 Blue Limia (October, 39)
 Bold Blennies (May, 68)
 Booklet: 101 Tropical Tips
 (February)
 Book Reviews (February,
 March, 53; July, 51;
 October, 38; November,
 62; December, 71)
 Breeding *Neolamprologus*
ocellatus (July, 31)
 Breeding Truth, The
 (October, 49)
 Broken Boats & Bananas
 (November, 6; December,
 10)
 Brilliant Basslets (January,
 18)
 Butterflyfishes (May, 20)

C
 Call to Arms! A (August, 62)
 Cape Galaxias (May, 42)
 Captivating Cardinals
 (November, 10)
 Cats and Ponds Don't Mix
 (March, 32)
 Choosing a Camera (August,
 31)



So You Think You
 Can't Keep Discus?
 September, 53

BEGINNING WITH MARINES



*Anyone Can
Keep Marines*

*Rockpooling
in Oporto*

*Fish for
Beginners*

*Marines In
A Pond?*

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You've probably been admiring those television travel programmes involving paradise islands — they always seem to crop up with annoying regularity just as our weather takes a turn for the worse — and marvelling at the underwater shots of the coral reef and its inhabitants.

You may also have wondered if capturing a slice of this action in an aquarium is both possible and practical.

We've put together this Supplement to answer just those sorts of questions. In this day and age, yes, anyone can keep marines and, providing they choose sensible combinations of livestock, success is certainly within their grasp.

Our regular contributors write with such confidence in their subject that they often fling in unfamiliar terms as though it is second nature; well, it might be to them but to newcomers it's a different story.

So, to help smooth out any glitches in your marine vocabulary we listed a few of the 'puzzles' to enable you to keep your head above water — after your virtual visit beneath the waves!

Just for entertainment (for those 'clever clogs' who already have a successful marine aquarium) we've got a couple of other items which look at marine fish in a slightly different light and we don't mean actinic, either!



Anyone Can Keep Marines

Dave Garratt says there's nothing to fear from the saltwater brigade **38**



Rockpooling in Oporto

Iggy Tavares foregoes the more traditional local attractions in favour of a saltwater alternative **41**



Fish for Beginners

Dave Garratt has some guidance on suitable species for newcomers **44**



Marines In A Pond?

David Conway finds a unique saltwater set-up **48**

PLUS: Marine Jargon Explained

An A to Z of common terminology **51**

Anyone Can Keep Marines

*Dave Garratt
says there's
nothing to fear
from the
saltwater
brigade*

PHOTOGRAPHS BY
A&P LIBRARY

▼ Not everyone has a marine tank this big but ... 'mighty oaks from little acorns', etc.

On many occasions in the past I have heard people comment on how they would like to set up a marine tank but are discouraged by their reputation of being difficult to keep.

Friends and acquaintances who have kept freshwater fish have often expressed similar views. I have overheard admiring remarks in retailers, only for them to be followed by the same 'too difficult' comment.

Marine-based talks to freshwater aquatic clubs, aimed at beginners, seldom seem to have any appreciable effect in overcoming this same assertion.

I have never considered our hobby to be an elitist pastime and believe, given the correct advice, the help of a reputable

dealer, access to good literature and, above all, patience, anyone can keep marines.

Complexity of articles

However, before writing this article I skimmed through a single issue of an aquarium magazine (not *A&P* I hasten to add, in fact not even a UK magazine) and was astounded by the complexity of some of the articles, and the equipment available to the marine aquarist.

I compiled a list after skipping through just three quarters of the magazine (before boredom set in) and here it is in all its glory:

Water purification: Reverse

osmosis, T.F.C. membranes, RO and RODI purifiers, phosphate filters, silicate removal de-ionisation cartridges.

Lighting: Actinic 03, Actinic white, Actinic phosphor, Tri-band phosphors, 5,600K, 20,000K, retro kits

Water additives: Strontium, molybdenum, manganese, kalkwasser, lugols solution, plus a 1,001 (a tiny exaggeration) commercially-named products.

Equipment and filtration: Calcium reactors, venturi skimmer, Berlin skimmer, pre-skimmer filters, dosing pumps, pH calibrants, nitrate reductor, OPR controllers, moving sand filters, fluidised filter beds, siporax, algae scrubber, live sand filters, plenum filtration, Jaubert/NNR system, wet/dry filter, mini-reef, aragonite crushed coral.

Live rock: Curing live rock, aquaculture live rock, base grade rock, grade one or two rock, etc.

Test kits for: Ammonium, nitrite, nitrate, copper, calcium, KH/alkalinity, magnesium, phosphate, silicate, strontium, iodine, pH.

I realise many of these items revolve around specialised living reef aquaria using 'state of the art' technology. I also see the need for magazines to cater for all tastes, plus the articles do make interesting and informative reading.

Nevertheless, the magazine would have made a very daunting read for the beginner.



First smitten

We should not overlook our own humble dabbling when we were first smitten by the marine bug. For any hobby to survive it needs a constant stream of new enthusiasts particularly in the younger age group.

In this respect I feel *A&P* caters for the beginner exceptionally well. I feel I am beginning to drone on, somewhat like a sermon, so I will get down to the nitty gritty and examine how anyone can aspire to keep a basic marine set-up.

I will suggest whenever possible information sources and articles aimed at the beginner, that will further illustrate pertinent points.

Filtration: keep it simple

I would suggest a 30 to 40 gallon tank as a minimum, filtered by one of three methods:

- (1) Undergravel filtration powered by submersible power-heads.
- (2) Reverse flow filtration run by an external power filter.
- (3) Fluidised bed system using one of the many moving sand columns now on the market.

The undergravel is a tried and tested method that will teach the basics of filter maturation and will not break the bank. Reverse flow is a more efficient variation of the traditional downflow under gravel.

I wrote a fuller argument on the merits of basic undergravel filtration in the March 1997 edition of *A&P*. The fluidised systems provide a very efficient system at a competitive price and I believe they may well prove to be the end of the line for undergravels.

Avoid hassle: keep a fish-only tank

I know a mixed community gives a more natural tank and looks superb but this comes at a price that I do not think the beginner will really want, ie, a

lot of potential grief.

Once again for a full exploration of the question I would point the reader to my article in an earlier edition of *A&P*, namely July 1998.

A marine aquarium cannot possibly support livestock until it has a matured biological filter. This will apply from a basic set-up to the most technologically advanced system. They all require a biological filter to prevent the livestock poisoning themselves through their organic waste.

In a nutshell, the biological filter acquires populations of beneficial bacteria that will break down fish waste products through the process of the nitrogen cycle. Dangerous ammonia based waste is converted through nitrites (still deadly) to relatively harmless nitrates that can be kept in check by water changes.

The best way to kick-start the whole process is by using a commercial maturation fluid. Even after initial maturation the bacterial bed will continue to evolve and increase its capacity to handle nitrogenous waste.

You cannot place all your intended fish into the tank during the first few days after the nitrite falls to zero. You must build up your stock gradually over the first few months of the tank's life.

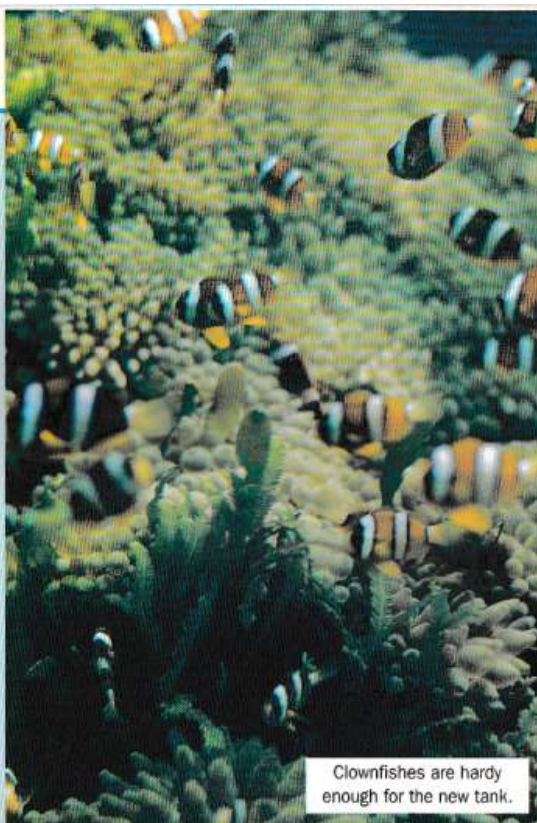
OK, this may sound an overly cautious approach, and experienced aquarists may get away with rushing it, but we are talking beginners here. Patience is a far better approach.

Biological maturation is covered in all decent marine aquarium books.

A sensitive nature: balanced on a knife edge

There are two fundamental differences between saltwater and freshwater environments and they help to illustrate the very sensitive nature of marine fish.

Coral reefs represent one of the most stable environments on earth. Consequently, marine fish have had no need to evolve mechanisms to



Clownfishes are hardy enough for the new tank.

adapt to sudden change and, therefore, cannot tolerate such changes.

Freshwater fish have body fluids that are more concentrated than the freshwater surrounding the fish. Therefore, by a process known as osmosis water passes from the weaker solution, ie, the freshwater, to the stronger solution, which in this case is the fish.

The freshwater fish has to pass large quantities of water to retain correct fluid balance. In marine fish the reverse is true. The saltwater is stronger than the body fluids of the fish and, therefore, water moves from the fish to the surrounding salt water.

The marine fish has to ingest large quantities of water to keep its body fluids at a stable concentration.

Bearing these two factors in mind should always help the aquarist to envisage the delicate balance marine fish are striving to retain. These factors should emphasise the need to adhere to stable water parameters and to maintain excellent water quality — the last thing a marine fish needs is the added problems of fluctuating tank conditions.

Such biological struggles

mean marine fish are constantly expounding vast amounts of energy hence the question of correct diet comes into play.

Feeding: quality, not quantity

Feeding habits of marine fish are many and varied. Be sure to know the feeding habits of the fish you purchase and feed them according to those requirements.

There are a tremendous range of foods on the market enabling a correct and varied diet to be offered to any fish you are likely to keep. Do not become complacent, your fish may readily take flake but is that any reason to resort to throwing in a few flakes as and when you remember?

Regular tank maintenance, the carrying out of certain test procedures, good husbandry and commonsense will all be vital in maintaining good water quality and a stable tank.

Here are a few do's and do not's.

DO:

Regular partial water changes;

BEGINNING WITH MARINES

Anyone Can Keep Marines

Regular water tests for PH, specific gravity, nitrite and nitrate, especially in the early weeks of the tanks' life;

Regular checks: clean power filters; empty skimmers; check air-stones; check powerheads to ensure

adequate flow through under-gravel; regular filter bed maintenance; remove excess algae; top up evaporation losses.

Observe your fish on a daily basis — get to know their habits. This is a better approach than becoming paranoid over any slight blemish that appears. You should pay great attention to any sudden change in behaviour;

Find a committed dealer and use him on a regular basis to build up a trusted relationship.

DO NOT:

Overfeed;
Overstock (a cardinal sin);
Buy on impulse, ensure you know as much as possible about your intended purchase;
Rush headlong into trouble, plan and take your time — it is not a race.



When buying a Cleanerfish make sure it is the genuine thing and not a vicious Sabre-toothed Blenny which is a lookalike species.

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See Nick Dakin's Review — <http://www.nickd.clara.net>

Compatibility — war or peace?

A major, but often underestimated, problem for marine aquarists. If you abide by the third and fourth 'do not's' from the list above then you should avoid the worst problems.

Further advice can be found in any good marine book. There was a Marine Supplement included in the November 1997 issue of *A&P*. It contained an article on compatibility along with other useful articles for anyone contemplating their first marine tank.

There are a few tried and proven aids from the many available that will give a major impact for a reasonable price. I believe the ones listed below to be indispensable.

(1) An air operated protein skimmer. Provided this is kept clean and emptied on a regular basis it is probably the single most effective aid to the successful running of a marine aquarium. A skimmer will break down a large amount of organic waste before it reaches the biological filter, thereby easing the load on the filter.

(2) Chemical treatments. Carbon filtration will prove an excellent weapon in your bid to maintain excellent water quality. Ensure you purchase a 'marine grade' product and replace on a regular basis. The commercial adsorption resin known as a 'polyfilter' has acquired a good reputation.

Both carbon and polyfilter can be used in an internal or external power filter and both will help remove inorganic waste products that cannot be broken down by the biological filter.

Water changes: a must

Despite an efficient biological filter, protein skimming, charcoal and polyfilter, your tank will still need water changes on a regular basis. The changes will help control waste

products that may not be removed by your biological filter and other water management agents.

For example, they will keep nitrate levels in check. They will also supply top-ups of the trace elements and essential minerals found in all good marine salt preparations.

Most authors appear to be in favour of small weekly changes of five to 10 per cent of the tank volume, as opposed to larger monthly changes in the order of 20 to 25 per cent.

The smaller changes will undoubtedly be easier to manage and although every week may seem somewhat of a drag they may prove easier in the long run than handling larger volumes of water every month.

However, if you can cope with the larger volumes they will probably work just as well in a fish only tank housing fairly hardy 'beginners' fish.

Conclusions

I believe the points covered above are the major issues surrounding the success of your first marine tank. I cannot overestimate the virtue of reading as much information as you can lay your hands on. Joining a marine club (unfortunately these are few and far between) would also be a boon.

Finding a reputable dealer with whom you can establish a good relationship is also a great advantage. This should be a two-way event with the time and advice of the dealer being repaid when it comes to you purchasing your equipment or livestock.

Finally, I would like to finish by suggesting further reading sources.

Books

The Book of the Marine Aquarium, Nick Dakin, Interpet.
The Tropical Marine Fish Survival Guide, Gordon Kay, Ringpress.
The Interpet Encyclopedia of the Marine Aquarium, Dick Mills, Interpet.
The Marine Aquarium Guide, Frank De Graaf, TFIH.
The Marine Aquarium — Beginner to Breeder, Martin Moe Jr, Green Turtle.
Keeping Marine Fish, Graham Lundegaard, Blandford Press.

Rockpooling in Oporto

Oporto, the second largest city of Portugal, which in reality is town-sized, is situated at the mouth of the River Douro up in the Costa Verde province, in the north of the country.

Old Oporto, which dates back to before Roman times, has narrow cobbled lanes with small interesting shops and is now surrounded by more modern developments.

I was particularly impressed by the large town square, Praca de Liberdade, with its large Town Hall and statue of King Pedro IV. The 12th century Cathedral is Romanesque in structure but has a Baroque high altar

thronged with gleaming decorated angels and saints.

From the Cathedral courtyard one has impressive views of old Oporto. Many other ancient churches adds to Oporto's unique character.

Food and drink

One can eat well in Oporto, with a wide selection of shellfish, prawns and fish (salmon, halibut, cod) always on offer. *Bacalbau*, a traditional fish dish, consists of dried salted cod, boiled and prepared in a sauce. Meat dishes include *Cozido a Potuguesa*, a traditional dish

of boiled beef and vegetables and *Rojoes* consisting of fried pieces of pork.

Oporto is of course famous for its port wine, which comes in red, tawny and white and ranges from ultra-sweet to extra-dry. A good place to sample the port is at the wine cellars in Gaia, across the river from Oporto. Other wines well worth sampling are Vinho Verde and Rose.

Down to the beach

From the Meriden Hotel the beach was only a 10-minute

Iggy Tavares foregoes the more traditional local attractions in favour of a saltwater alternative

PHOTOGRAPHS BY THE
AUTHOR

◀ Oporto skyline seen from the cathedral.



BEGINNING WITH MARINES

Rockpooling in Oporto

taxi ride away. On my first visit to the seaside, late in the morning on a cool weekday with the sun rarely poking out its head through the clouds, very few well-clad people were on the beach. The tide was out, leaving a host of rocky outcrops that were full of pools.

Not being the proverbial boy scout I had come unprepared for rockpooling. I did have my trusty camera, but only with the standard zoom lens, having left the macro lens back in London.

Moreover, I did not have my special photographic tanks for close-up photography of the small fish I was hoping to catch, or even a net to catch

fish with. I had, however, noted that there were several fishing tackle shops in the old town and decided to check for a suitable net when I had a chance later.

Anyway, since time and tide waits for no man, I decided to investigate the rocks and pools immediately. I was in for a treat, because there was a whole range of pool biotopes, ranging from shallow to deep and from bare to well vegetated.

Some of the huge rocks completely out of water at low tide had a good growth of dark blue mussels, all tightly closed as they were out of water. I was surprised how rock pools only a metre or so apart could be colonised by very different seaweed.

Wrack, probably Bladder Wrack, was well established on this coastline. It had colonised many of the rocks and was also found as the major seaweed in some of the pools.

Some exposed rocks and some pools had only fine bladed green seaweed similar to *Cladophora rupestris*. In some small pools, further back from the seafront, small colonies of another green seaweed, *Monostroma greville*, which are a smaller version of the Sea Lettuce, afforded the animal inhabitants of the pool some

shelter.

Green was not the only colour, as some pools were taken over by predominantly some small red and brown seaweed. One particularly finely-fronded red seaweed caught my eye, and I was able to lift a loose lying bunch for closer examination.

I suspect that it was *Griffithsia flosculosa* rather than *Ceramium rubrum*, while another attractive small red plant with flat fronds might have been *Mastocarpus stellatus*. Lower plant life such as *Cymodoce nodosa* also added their bright yellow colour to some rock pools.

One or two pools had a few Sea Urchins, *Arbacia lixula*, which is an attractive species with dark purple spines. A surprising find was a small colony of pink Sea-anemones that occurred in only two adjoining shallow pools. Some of the anemones were fully open with their tentacles stretched out, but others had theirs almost completely withdrawn.

A few brown crabs with 2in shells were sunning themselves and probably feeding on the exposed rock, but they were too quick for me and dived into the pools before I could identify them.

Many of the pools were inhabited by shrimp of different sizes, some as big as

1 1/2in long. Pale sand-coloured Blennies were well camouflaged as they lay still on the sandy bottoms of some of the pools; I only saw them when they moved. There were larger Blennies as well, but these were darker in colour and more often took cover in the seaweed as well.

There was good selection of live seashells in the rock pools, but not having a pocket book I was unable to identify them. One of the rock pools away from the sea appeared to have a healthy population of *Daphnia* and Bloodworm and I, therefore, surmised that it was probably fresh water.

I made my way back into town and found the fishing tackle shops. One shop appeared to have what appeared to be a suitable net, 9in in diameter with small mesh and a 4ft metal pole. As the price was only 700 escudos (£2.50) I happily purchased the net.

Next afternoon, having finished with my conference, I made my way down to the beach at about 4pm. The tide was in, resulting in most of the rocks being submerged. There were, however, some rock pools to explore.

In spite of there being quite a few people on the beach, some of them fishing, I overcame my shyness and decided to have a look at the



pools. The rock pools had quite a lot of life in them ranging from small shrimp to Blennies.

I had never rockpooled before and did not realise how difficult it was to catch anything. Everything was so quick and agile and at the sight of my net and me they darted and took cover under rocks and between crevices.

A round net was really unsuitable for catching these surface hugging creatures. Two rectangular nets would probably have worked better, with one net being used to guide the fish and shrimp into the other. After about half an hour I gave up having caught nothing and instead concentrated on taking a few more photographs.

The seawater temperature at Oporto in May is about 14°C, which is of course is too cold for swimming at that time of the year. However, the rock pool temperature can increase dramatically even in hazy sunshine, offering the cold-blooded inhabitants the advantage of warmth during the day.

These animals and plants do have to be able to cope with dramatic temperature changes when the tide comes in and at night. The rock pool is, therefore, a microcosm that changes with tide and time of day and makes for very



interesting exploration, as life forms change from day to day.

The Sunday pet market

I was lucky to find the Sunday morning pet market, located near the main railway station. When I stumbled on the market by chance on my way to the Cathedral at midday it was thronged with people.

The market stall holders dealt principally with caged birds but there were about half a dozen stalls selling fish. There was a small selection of tropical fish, which included Guppies, Swordtails, Paradise Fish, Gouramis and Glassfish all at 200 to 300 escudos (around £1). All these were in unheated small tanks, but appeared to be happy enough with the outside temperature at around 20°C.

An attractive 30in aquarium with black plastic hood and base, including what appeared to be a filter-heater unit, was only 17,000 escudos (£60) which was quite cheap if it also included the lighting unit.

Goldfish and Orandas (3in) were also cheap at

200 to 400 escudos (70p to £1.50) and were housed in a variety of bowls, some shaped like large brandy glasses. By 1pm the lively, colourful market had wound down and was virtually empty.

Conclusions

I had come to Oporto to speak at a scientific conference and hoped to be well wined and dined by the gentle Portuguese. I especially enjoyed the different kinds of Portuguese port wines as well as the abundance of seafood.

Moreover, Oporto, being a very old town, has a lot of historical points of interest which I found well worth visiting. An unexpected bonus

for me was being able to do some rockpooling.

Reference
Hayward, P., Nelson-Smith, T. and Shields, C. *Sea Shore of Britain & Northern Europe*. 1996. Harper Collins.

▲ Oporto market stall with tropical fish and goldfish.

◀◀ FAR LEFT Fine bladed green seaweed.

◀ LEFT Dark blue mussels.



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Fish for Beginners

*Dave Garratt
has some
guidance on
suitable species
for newcomers*

PHOTOGRAPHS BY
A&P LIBRARY

When the new marine hobbyist has matured his/her tank the last thing they should do is rush out and buy the fish that happened to take their fancy whilst they were window shopping.

There are a large number of

fish that can be found in retailers' tanks that are just not suitable for the rigours of a new tank or the possible mistakes of someone new to the hobby.

I would suggest there are three major causes of grief

when stocking a marine tank:

1. Overstocking
2. Incompatibility
3. Unsuitability for captivity

The first two reasons should not occur if you have done your home-work thoroughly. The last one may occur through no fault of your own, however, it is less likely to happen if you stick with a reputable dealer on a regular basis.

Fish may be unsuitable for captivity for a number of reasons, such as:

1. Specialised diets/dietary restrictions.
2. Prone to disease when in captivity.
3. Very susceptible to water quality.
4. Too large/small to adapt to captivity.
5. Short aquarium life-span (the species of fish in this category are generally known as ones to avoid, even if the reasons for their early demise may be unclear).

I am not going to delve into these reasons as the aim of this article is to supplement my beginners' article, found elsewhere in this magazine, with a brief overview of what the beginner should be looking to keep.

Bear in mind marine fish of the same species, same genus, similar colour, or similar size and body shape, may not mix peaceably and could well indulge in serious fighting. Do



▶ Juvenile Batfish are fine but have you got room for an adult?

BEGINNING WITH MARINES

Fish for Beginners

your homework and planning before purchasing your livestock.

Damsels

Colourful, hardy, cheap, easy to feed and, therefore, often seen as an ideal beginners fish.

Unfortunately, some of them can grow into aggressive, relentless bullies. Keep single specimens of different species or a small group of fish (perhaps five) of the same species.

Peaceful species are the Green or Blue Chromis (*Chromis caerulea* and *C. cyanea*, respectively). Two species, *Chromis xanthurus* and *Pomacentrus violascens*, are both sold as the very popular Yellow-tail Blue Damsel, however, the latter species is a more aggressive fish. Similarly the Blue Damsel

(*Abudefduf cyaneus*) is much less aggressive than its near look-alike the Electric Blue Damsel (*Pomacentrus coeruleus*).

Clownfish

Clownfish are often regarded as hardy species but this can be misleading. Keep to Maroon, Tomato, Sebae or Clarkii Clowns for a hardier fish. Unfortunately, the hardier species also seem to be the ones most likely to become very aggressive as they mature.

Basslets

Ideal, small, colourful, hardy beginners fish that are peaceful except towards each other or similar species. Species such as Royal Gramma (*Gramma loreto*), False Gramma (*Pseudocbomis paccagnellae*), Strawberry Fish (*P. porphyreus*), and the Flash-back Gramma (*P. diadema*) are all ideal.

Blennies

An underrated group of fish, perhaps because they are not as colourful as some marine fish. However, they more than make up for this by their lively nature or quirky habits. The Bi-colour Blenny (*Ecsenius bicolor*) is by far the most common Blenny seen for sale and although it may be a little drab it is full of character. The Midas Blenny (*E. midas*) apart

from its colouration, is very similar.

Gobies

A varied group of fish, some interesting characters, others strikingly beautiful. The Neon Goby (*Gobiosoma oceanops*) and Yellow Gobies (*Gobiodon citrinus* and *G. okinawae*) are small, undemanding fish. The Firefish and Purple Firefish (*Nemateleotris magnifica* and *N. decora*) are the beauties of the group.

The perpetual digging and sand sifting habits of the Blue Check (*Valenciennea strigata*) and Orange Spotted (*V. puellaris*) Gobies make for very interesting additions to any tank.

However, taking the prize for most fascinating Gobies must be the Sleeper or Watchman Gobies - they excavate and share their burrow with Pistol Shrimps.

Hawkfish

Peaceful and colourful if a little on the inactive side. The Long-Nosed Hawkfish (*Oxytrichus typus*) is a striking fish with its long nose and unusual chequered body pattern. It is a peaceful fish spending much of its time perched on its favourite bit of rock work until food enters the tank, then it is no slouch.

The vivid red Flame Hawkfish (*Neocirrhatus armatus*) is another peaceful fish that should feed well and offer the beginner very little in

the way of problems.

Dwarf Wrasse

Small Wrasse are generally peaceable (but not towards each other), hardy, easy to feed, colourful and very active fish. Suitable species include the Pyjama or Six Lined Wrasse (*Pseudocbellinus hexataenia*) and the Yellow/Banana Wrasse (*Haliobcoeres chrysurus* or *H. trispilus*).

Dwarf Angels

Perhaps a little more delicate than the fishes so far mentioned, but not really beyond the scope of a beginner with a well matured tank. Some hobbyists seem to be able to mix different species successfully but there is always the potential for disagreement between related fish. Suitable species would include the Coral Beauty (*Centropyge bispinosus*), Fireball Angel (*C. acantbops*) and Cherub Angel (*C. argi*).

Large fish

All of the fish covered so far are fairly small fish that could be housed in a small community tank.

There are, however, much larger fish that the beginner could consider, indeed a large specimen could become the focus of the tank. A large fish could also be housed with similar sized fish but unless a



large tank was available the number of fish would be severely restricted due to stocking levels.

Alternatively, a large specimen, if non-predatory, could be housed with a collection of smaller fish.

Batfish

These fish can grow very large, very quickly, easily reaching 10in or more. The plus side is that they can become quite tame and often come to be regarded as a pet. Not all Batfish are hardy and I think the choice is really restricted to the Orbiculate Batfish (*Platax orbicularis*).

Puffers

Large, hardy, easily fed fish whose cute/ugly looks (depending on your point of view) have endeared them to many hobbyists. They will definitely be a talking point with your visitors. They reach quite a large size in captivity (10in) but are generally peaceful.

They can, however, exhibit a frenzy at feeding time thereby excluding you from keeping them with delicate or small fish. Your choice could be between the Porcupine Puffers of the Diodontidae Family or the Dog Face Puffers of the Tetraodontidae Family.

Triggers

Hard as nails, will eat



anything, colourful, active, interesting characters, striking colours and/or markings, in short a perfect beginners fish? — well they do have a (tiny!) drawback — they can be homicidal maniacs.

There are two peaceful species, ie. Blue/Black Trigger (*Odonus niger*) and the Black Finned Trigger (*Melichthys ringens*). These two pacifists are outnumbered by the many real brutes of the Family, such as the Clown Trigger (*Balistoides conspicillum*), Undulate Trigger (*Balistapus undulatus*) or Queen Trigger (*Balists vetula*), to name but three.

Summary

The beginner has quite a choice of fish and consequently a variety of tank communities to choose from. The choice for a peaceful community of small fish is particularly varied.

With Damsels you could opt for a small group of the same species or a mixture of single species. You also have the scope for a number of fascinating fish when considering the Gobies. You can find some particularly beautiful species among the Dwarf Angels, Basslets and Firefish.

Finally you could opt for a number of larger species if you have enough space or

◀ FAR LEFT The Regal Angelfish, *Pygoplites diacanthus*, often has a poor survival rate in captivity but if you gets its requirements exactly right, then it's a magnificent fish to keep.

LEFT Perhaps everyone's beginning fish, the Clownfish certainly fits the bill.



you could make one or two large fish the central attraction of the tank. When a little experience has been gained a whole host of slightly more challenging fish could then be considered.

▲ TOP OF PAGE What could be more colourful than this Goby, *Lythrypnus dalli*?

ABOVE Further up the scale, the Queen Angelfish, *Holocentrus ciliaris*, means your marine keeping is getting serious!

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BEGINNING WITH
MARINES

Marines in a Pond?

*David
Conway
finds a
unique
saltwater
set-up*

PHOTOGRAPHS BY
THE AUTHOR



► An aerial view of
the Logan Fish Pond
Marine Life Centre.

Marine pondkeeper Mr Andy Whitehead lives in the Victorian cottage built next to an outdoor fish pool, at Port Logan, in Scotland.

Mr Whitehead has managed to salvage the only living example of a Victorian live fish larder and turned the site into a marine life centre where an unbeatable success rate at keeping fish shows how even a novice can end up being the supplier of stocks of live fish for some of the biggest marine displays, in the country.

Which only goes to show how primarily important it is to get the environmental conditions in your pond just right and you cannot get much closer than a direct

input from mother nature herself.

The waves arrive crashing at the walls of the fish pond to provide a natural aerated source of water that flows into the man-made pool. Mr Whitehead, a local publican in Port Logan, turned into a marine pondkeeper in 1993 when he acquired the derelict fish keeper's cottage on the old McDouall estate.

He settled into his entrepreneurial venture hook, line and sinker and now lives and works in the Victorian cottage, next to the pond.

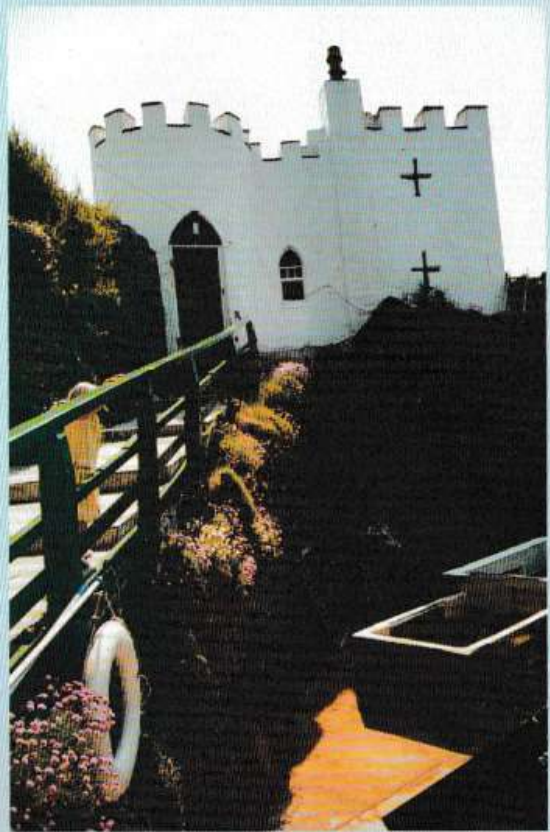
Visitors are invited to enter the front door of the cottage and to pay an admission charge to Heather Unwin or Caroline Thompson, who help to run a small shop inside the reception.

The charge for adults is £2 and 50 p for children, which includes an informative guide, in the shape of Mrs Sue Boyle from the Logan Fish Pond Marine Life Centre.

A site of human and natural historical interest the live fish larder no longer supplies fish to the big house, on the Logan Estate, from which it is leased. Instead the fish pond that was purpose-built by nature, carved out by the glaciers, like a giant rockpool, during the Ice Age, now attracts between 10-20,000 visitors a year.

In 1788 a 35ft high round wall was constructed around a natural fissure in the rocky shoreline. The Laird, Colonel Alister McDouall, employed a fishkeeper to look after the daily fish catch by local fishing boats.

The fish were kept in by an iron grill put across the mouth of the cavern, at the entrance to the inflow from the sea. Fresh fish on the menu must have been a privilege to eat and, served to a lady, may have been an aphrodisiac delight, or made



▲ The house/shop/reception at the top of the steps leading down to the pond, showing the touch tank bottom right.

▼ The pond looking from the cave entrance.



BEGINNING WITH MARINES

Marines in a Pond?

any gentleman wish he lived by the sea.

In the past the walled pond was flooded by the rising tide and drained as the waters fell through a natural blow hole in the rocky face. Even at the low tide mark the water collected still remains to this day at a minimum depth of 8ft from the base of the footpath, to the bottom of the natural seawater pond.

Although, little has changed in principle the flow of water today is manually controlled by a 10in mains water valve that was installed, in 1995 by the owner, Mr Whitehead, and a

group of friends.

The valve, weighing approximately 3 tonnes, lies at the bottom of the mouth of the cliff entrance. The water passing through the valve pipe is naturally filtered through the loose pebbles and coarse gravel that has collected to form a mobile barrage in the stony bed of the small, ravine-like channel.

The whole fissure has been capped and blocked by a 20ft high cement wall and a roof over it to create the atmosphere of a cave. In the cave you will find six tanks containing many different and unusual species. The

most popular specimens appear to be the six different species of starfish that are on display.

Even the Common Sunstar, *Crossaster papposus*, and the Purple Sunstar, *Solar endeca*, are very difficult to keep, as starfish in general prefer to be kept in the dark and murky sediments and do not like a lot of artificial light.

As such there is not much danger of bright lights but then the fauna probably feel less stressed, as a result. The tanks in the cave are lit by 12 volt bulbs and do not do justice to the displays themselves.

To have a guided tour is particularly important when the tanks are harder to see. Blue lights at the end of the cave try and create an atmosphere of the deep blue.

In the touch pool children and adults alike can pick up the Common Starfish, *Asterias rubens*, or watch and feel how sticky the tentacles are of the Beadlet Anemone, *Actinia equina*, when they are stretched out to feed.

Feeding time in the main pond is interesting as all the fish then come to the surface in a frenzy of activity. There are normally 80 fish kept in the 22ft diameter pond with a footpath leading around the edge.

The species list includes most of the popular varieties like the prickly Thornback Ray, *Raja clavata*, and the inquisitive Cuckoo Wrasse, *Labrus mixtus*.

The male Cuckoo Wrasse is undoubtedly our most colourful native species, painted in a shiny red and blue strip, like Indian war paint.

The most common visitors are from the nearby caravan sites in the summer. The Logan Fish Pond Marine Life Centre is situated at Port Logan, Stranraer, Wigtownshire, Scotland (tel: 01776 860300) 14 miles south of Stranraer off the B7065 road, one mile from Logan Botanic Garden from where it is well signposted.

It is open daily, from March 15 to October 31. But don't go and wake Andy up too early as he likes to open at 12noon until 5pm!



Sea Urchin.



Spiny Starfish.

Marine Jargon Explained

Actinic — a type of fluorescent tube giving a blue glow which is beneficial to invertebrate life, especially stony and soft corals

Amyloodinium — the marine equivalent to the freshwater parasitic disease, Velvet

Aragonite — a special form of calcium carbonate, a crystalline form which is the most soluble. Used to good effect in plenum type systems

Benthic — bottom dwelling, or anything pertaining to the depths

Berlin — a modern marine system which utilises live rocks to provide the main biological filtration action

Cryptocaryon — the marine equivalent to the freshwater parasitic disease, White Spot

Demersal — a word used to describe eggs which are laid or deposited on a firm surface

Fluidised bed — method of biological filtration in which the filter bed sand medium, usually contained in a vertical cylinder, is kept moving by the water passing through it, thus providing a much larger area (thus more efficient) for the nitrifying bacteria to colonise

Hydrometer — device for measuring the Specific Gravity of the water in a marine aquarium. May be a floating type or a 'swing-needle' in a box' type

Jaubert — a marine system using the 'plenum' (see below) as developed at the Monaco Aquarium by Dr Jean Jaubert. The main principle is the slow downward movement of water through the gravel in which oxic, anoxic and anaerobic layers are progressively formed

Kalkwasser — literally 'Calcium Water' or limewater as we know it. Used as an additive for the benefit of corals

Macro-algae — not the horrible, 'can't get rid of it stuff' but beneficial and decorative green plants such as *Caulerpa* upon

Whilst it is generally expected that turning to marines is a great leap of faith (or calculated risk, as some pessimists would have it), there are some techniques that are shared by freshwater fishkeepers but also some that might be a bit of a mystery to newcomers

which many marine fish graze

NNR — Natural Nitrate Reduction. A phrase used to describe a version of the Jaubert marine system developed by Bob Goemans

Ozoniser — usually a high voltage discharge device which generates ozone (O₃), a very strong steriliser, which is then added to the airflow from an airpump. Must be used in a separate chamber to avoid dangerous contact to fish. Excess ozone in the air (from overdosing) can cause nausea to people in a fish house

Pelagic — a word used to describe eggs which are scattered in open water, usually near the surface, to allow surface currents to disperse the eggs and subsequent larvae

Polyfilters — not the familiar 'sponge on a stick' filter of freshwater aquariums but a filter medium incorporating polymers for special absorption applications

Protein Skimmer — a method using vigorous aeration in an enclosed chamber to remove proteinaceous (organic) materials through their natural tendency to 'stick' to any air/water interfaces, in this case the bubbles. The protein rich froth overflows into a collecting cup from where it may be disposed of at regular intervals. Some forms of protein skimmer work by diffusion rather than using aeration

Plenum — literally 'space' or empty void. Refers to the modern practice of setting up an empty space below the deep layers of substrate used in the *Jaubert* System by means of a supported

plastic grid ('egg-crate'). In constructional terms it might be regarded as a disconnected, sealed off undergravel system with an extra space beneath the filter plate; there is certainly no appreciable water movement through the system

Redox Potential — the actual word Redox is a combination of abbreviations for REDuction and OXidation. The Redox Potential is a measurement of the ability of the aquarium's system to oxidise or, as more aptly described by John H. Tullock: "The measure of the ability of the system to eliminate waste."

RO — abbreviation for Reverse Osmosis. Method of purifying water by passing it through a membrane to remove unwanted impurities

Salinity — the amount of salts dissolved in water, usually

expressed in parts per thousand (ppt)

Specific Gravity — usually abbreviated to S.G., this is a ratio of the density between the sample of tank water compared to a sample of pure water (whose S.G. is 1.00). It should be remembered that S.G. varies with temperature and all tests should be carried out at normal tank temperature using a *hydrometer* that is calibrated for this temperature range

Symbiotic — a term meaning the dependence of one species upon another for mutual benefit. Whilst some may query the use of the actual word (preferring commensal) there are several examples in the marine aquarium which spring to mind: Clownfishes with Sea Anemones, Pistol Shrimps with Yellow-faced Jawfish and, of course, algae living within invertebrates. The services of Cleanerfish and the hitch-hiking tendencies of the *Remora* may lie outside the strict definition!

Turf Scrubber — the use of purposefully grown algae in filters to remove accumulated wastes. Usually found in large public installations rather than in more domestically proportioned aquariums

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Clear, Clean Water (July, 26)
 Coldwater Experiences (September, 17)
 Community Compromise, The (November, 56)
 Constructing a Pond Pergola (May, 12)
 Coral Conservation Seminar (March, 36)
 Costa Rica Quest — 1 Planning (March, 6)
 Costa Rica Quest — 2 Equipment List (April, 17)
 Costa Rica Quest — 3 (May, 48)
 Costa Rica Quest — 4 (June, 67)
 Costa Rica Quest — 5 (July, 52)
 Costa Rica Quest — 6 Getting the Fish Home (August, 17)
 Costa Rica Quest — 7 (September, 73)
 Costa Rica Quest — 8 (October, 61)
 Costa Rica Quest — 9 (November, 19)
 Costa Rica Quest — 10 (December, 58)
 Crustaceans Part 1 (March, 66)
 Crustaceans Part 2 (April, 55)

D

Darters and Hawkers (July, 16)
 Dashing Damselfish (September, 13)
 Descriptions of Two New Species of Catfish (January, 41)
 Discus & Diet (November, 42)
 Discus Care (July, 6)
 Discus Dealings (October, 28)
 Discus: My Way (June, 6)
 Disease Diagnosis (May, 33)
 Diseases of Fishes 1 (May, 24)
 Diseases of Fishes 2 (June, 58)
 Diseases of Fishes 3 Internal Flukes (July, 72)
 Diseases of Fishes 4 (August, 72)

F

Feeding Difficult Marines (September, 42)
 Fishkeeping Revisited (September, 62)
 Fish Nutrition (September, 49)
 Fish Photography is Fun (August, 38)
 Filtration Fundamentals (June, 37)
 Flowers of the Sea (December, 16)
 Forever Blowing Bubbles (February, 22)
 Fruit & Veg (January, 34)

G

Getting Your Message Across (June, 24)
 Go for a Goby (July, 10)
 Goldfish Shows December, 18)
 Gorgeous Gorgonians (February, 56)

H

Happy Birthday London Aquarium (April, 62)
 Hard by Name, Hard by Nature (October, 17)
 High-, Low- and No-Tech Goldfish Keeping Part 1 (October, 32)
 High-, Low- and No-Tech Goldfish Keeping Part 2 (November, 14)
 Hints on Catching Fish (January, 75)
 Holiday Blues (July, 62)

I

I Did it Bi-way (January, 27)
 Index 1998 (December, 34)
 Intricate Symbioses (July, 42)

K

Kippered! (April, 26)
 Koi News (December, 54)
 Koi Over the World — Part 1 (September, 24)
 Koi Over the World - Part 2 (October, 54)
 Koi News (November, 48)

L

Lighting the Aquarium (June, 65)
 Lionfish (October, 6)
 Little Extra Effort, A (24)

M

Malawi Cichlids of Deep Waters and Sandy Shores (March, 26)
 Man the Pumps! (November, 69)
 Marine Inflatables (August, 12)
 Mixed Fish with Invertebrates ... or Fish Only? (July, 58)
 My Fishkeeping Mistakes (February, 10)

N

Neolamprologus cygnus (January, 66)
 Nets, not Dynamite (February, 18)
 New Tank, A (January, 11)
 New Tank Syndrome (December, 24)
 Nordic Polar Aquarium Part 2 (May, 64)

O

Offshore Cichlids of Lake Malawi Part 1 (February, 21)
 Offshore Cichlids of Lake Malawi Part 2 (March, 26)
 Only Good Fish is a Dead One, The (October, 66)
 Out & About: Barcelona Aquarium (August, 50)
 Out & About: Fishworld '98 (November, 31)
 Out & About: Ivy Mill Aquatics (June, 30)
 Out & About: National Marine Aquarium Opens (July, 39)
 Out & About: New Orleans Aquarium (January, 62)

P

Palm Plantations (March, 47)
 Perils of Fish Photography (August, 26)
 pH, Hardness and Discus (August, 24)
 Policy of Prevention — Part 1 (May, 61)
 Policy of Prevention — Part 2 (June, 18)
 Pond Accessories (June, 46)
 Pond Design (March, 12)
 Pond Installation (March, 20)
 Pea Soup (March, 56)

R

Rooted Plants Part 1 (January, 6)
 Rooted Plants Part 2 (February, 72)

S

Sailfin Mollies (June, 34)
 Seven Deadly Sins (June, 62)
 Sharp Dressed Urchins (June, 32)
 Showing an Interest (December, 72)
 Slow Leaking Pond, The (June, 16)
 Small Garden Pond Project (February, 66)
 Small is Beautiful (March, 16)
 So You Think You Can't Keep Discus?

(September, 53)
 Speciality Spot — British Killifish Association (January, 70)
 Stock Rotation (June, 10)
 Story Behind the Story (March, 24)
 Supreme Festival of Fishkeeping (January, 76)

T

Tarquin's Holiday (April, 72)
 Tarquin's Other Guide (January, 52)
 Top Ten Books (December, 66)
 To Quarantine or Not? (May, 57)
 Touch of The Sun, A (January, 48)
 Tubeworm Treats (April, 6)
 Turf 'n Surf (January, 56)
 Two New Catfish (January, 41)

U

Underwater Photography (August, 34)

W

Warming to Goldfish (August, 53)
 What Clown Pulled the Trigger? (February, 6)
 What Does This Fish Eat? (September, 36)
 What Shall I Breed? (October, 42)
 What's in a Pond? (August, 46)
 Where to Next? (November, 51)
 Will They Bite? (November, 34)
 Wolf Cichlid (August, 6)

Y

Yellow Perils (March, 60)
 Yorkshire Aquarists Festival (December, 32)
 You Did What? (September, 31)
 You Write (April, 80; November, 76; December, 78)



Breeding the Blue Limia, October, 39

KOI NEWS

1998 PHOENIX TATEGOI CHALLENGE

A&P readers will recall the 1998 Phoenix Tategoi Challenge. Three high grade Koi were selected and placed in a top quality heated Koi pond and fed Phoenix Koi Food for the key growing period April to November.

All three Koi were photographed and measured before and after. Koi keepers were invited to use their skills to analyse the 'before' photographs of the Koi and then predict which of the Koi would improve most during the growing period, in terms of both growth and quality.

The entire topic of Tategoi and how Koi develop holds a special fascination to many Koi enthusiasts and the 1998 Phoenix Tategoi Challenge really caught

the imagination of thousands of Koi keepers and with not one but two fantastic prizes of £1,000 Tategoi as first prize the response from around the world was incredible with entries from 15 countries.

Phoenix have just announced the results and now you can see for yourself if you got it right. The two winners are Gary Abraham from Kent and Siegfried Rausch from Bavaria — many congratulations to both.

Before and After Photographs

Most improved Koi = Sanke C (Matsunosuke) — was 30cm, is now 43cm

Second most improved Koi = Sanke A

(Shintaro) — was 28cm, is now 38cm

Third most improved Koi = Showa B (Shinataro) — was 28cm, is now 37cm

The characteristics of Matsunosuke Koi are that they grow very large very quickly. Because Toshio Sakai reintroduced Magoi blood into his Go Sanke Koi the overall growth potential of his best Koi has increased from 80cm to 1m+.

We will continue to feed these incredible Tategoi on Phoenix and track their progress and in 1999 we hope to show you again how they have developed so we can all learn more about the fascinating topic of Tategoi.

BEFORE



AFTER



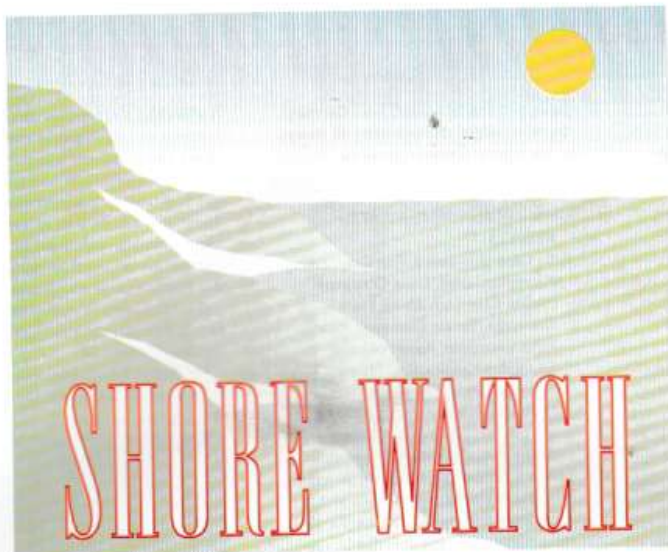
Koi C — displays classic Matsunosuke characteristics and must be physically seen to be fully appreciated. The Koi is absolutely incredible and will develop even more. Predictably, pattern development is not dramatic as Matsunosuke pattern changes tend not to be dramatic and often can take years to fully emerge. As they are late to flourish they last longer. Not only has this Koi grown most but it has improved tremendously in terms of quality, too.



Koi A — has grown and seen tremendous skin quality improvement. Shintaro bloodline is derived from Matsunosuke, so have similar characteristics. This Koi has developed to an impressive degree and has lots more to come.



Koi B — very subtle Showa that is developing well with awesome skin quality which we have great hopes will continue to get better and better.



"God I so good, so very good to the little fishes", Frank Buckland² is reported to have said when he realised he was dying in 1880. Aquarists will no doubt endorse his sentiments, but these thoughts are evidently not shared by a lot of marine anglers.

LITTLE FISHES BATTERED TO DEATH

Coarse anglers return even the largest fish to the river or lake. Marine anglers who dangle their bait over the edge of the piers for the crabs to nibble at, often behave in the opposite way, banging even the smallest fish, that dares swallow their worm, to death. These captures are dismissed as rubbish.

Occasionally, there is just about justification for their actions if the poisonous Weever fish, *Echiichthys vipera*, grabs the bait meant for something larger. This fish can discharge a painful

*The Bullhead, **Taurulus bubalis**, lies in ambush for its prey, ready to grasp a passing prawn or a small fish. It is not fussy about what it will try to engulf in its expandable mouth, it can always spit it out unless it is an angler's hook. Its ability to tackle prey as large as itself means that it is often caught by anglers after much bigger quarry. In aquaria it feeds readily on all the other fish.*

PHOTOGRAPH BY ANDY HORTON



BY
ANDY HORTON

In the column for the year I will examine some aspects of the biology and behaviour of the rock pool fish and marine invertebrates that are both interesting and useful knowledge for aquarists.

toxin into human skin through its black dorsal fin and spines. It even makes good eating although few people are bothered to prise off the small amount of flesh.

Aquarists occasionally keep this fish. In captivity it can bury itself completely in the sand on the bottom of the tank. Ironically, on the few occasions when this fish has been obtained by aquarists, it has more than

once been from an angler who did not know the nature of the fish on the end of the line.

MISTAKEN IDENTITY

Alas, many little fish get dispatched under the mistaken impression that they are dangerous. The four sharp spines on the Bullhead,

Taurulus bubalis, may prevent it from being eaten by larger fish, but it does not endure it to human anglers.

Unfortunately, it also has a book name of Sea Scorpion, which gives the impression that it is poisonous. It is a common fish with a large appetite and an expandable mouth it is able to engulf bait meant for much larger fish.

Therefore, it is frequently caught. It does not even have sharp teeth to bite the angler, so it should be treated with such disdain. In parts of Sussex it is known as the Clobberhead, which I do not know if it is because its flattened body resembles a fish that has already been clobbered, or because this is how it is frequently treated.

Eels, *Anguilla anguilla*, can annoy anglers by tangling around the line, but even the charming and inquisitive Blenny, *Lipophrys pholis*, should it still be dangling on the bait as it is hauled to the surface, is given short thrift.

TURNING STONES

Anglers collect soft-backed crabs from the shore, or 'peelers' about to moult,² for bait. They are used to catch large fish like Bass.

When crabs are about to change their shell they hide under rocks and bury themselves in the sand underneath. In order to discover them the young crabbers will descend on to



the beach and carelessly toss the rocks aside in a frantic search for bait for their hooks.

This action can be very destructive to the habitat as many of the life forms also living under or attached to the rocks are destroyed. It can also be detrimental to their own interests as the rocks are often embedded in depressions amongst mussel beds or seaweeds and a special habitat where crabs can change their shells safely has been created.

If the rock is removed no further crabs can take advantage of the habitat. Experienced fisherman shift rocks down to the lower shore to provide shelter for moulting crabs.



The number of crabs on the shore is dependent on the number of rocks to hide under. Larger crabs tend to be found under the larger boulders. The Shore Crab, *Carcinus maenas*, is also found in estuaries and under groynes on sand and shingle beaches.

PHOTOGRAPH BY ANDY HORTON

PILOT FISH

In September of this year Chris Gilbertson, of Mevagissey Harbour Marine Aquarium, reported half a dozen Pilot Fish, *Naucrates ductor*, that were caught in a Pilchard drift-net in Mevagissey Bay, Cornwall, about 100 metres offshore.

The fish were about 8in (20cm) long. One of the fish remained alive long enough for it to be examined in detail. It was slate-grey with five purple-black stripes.

This fish has a keel preceding the tail fin. The white tips to the tail fin and the anal fin were clearly visible.

The Pilot Fish is a rare visitor to the south west of Britain. It acquired its common name from its habit of accompanying sharks, turtles and large floating objects. The best guess is that it accompanied the Basking Sharks that were unusually common this year.

Pilchards have returned to the seas around south Cornwall in appreciable numbers in the last five years after a long absence. Mevagissey used to be famous for its Pilchards, which were called

'Mevagissey Duck', but by 1930 the fishery had declined. This was partly because of a small change in the sea currents.

ROCKPOOLING 1998

This year was the worst

rockpooling year I have known. It showed some promise in the early spring with a few cold spells keeping Arctic fish like the Butterfish, *Pholis gunnellus*, on the shore. A late spring hot spell sent them to deeper water. During summer the weather was to blame with rain and winds occurring at the low spring tides, so that visitors to the coast had

*Rockling are frequently cursed by anglers because of their readiness to swallow worms. All Rockling have an interesting dorsal fin that consists of vibrating rays sat in a trench and these sensory devices enable the fish to find food. The Five-Bearded Rockling, *Ciliata mustela*, is the commonest of the two species found in shallow water and on the shore, with the larger Three-Bearded Rockling, *Gaidropsarus vulgaris*, a fish of deeper water.*

PHOTOGRAPH BY ANDY HORTON



to dodge the showers.

EL NIÑO

The term 'la corriente de El Niño' was originally given to a warm current that replaced the cold Humbolt Current flowing up the Pacific coast of South America around Christmas.

El Niño means 'The Little Boy, or Christ Child', in Spanish. The presence of this warm current had an adverse effect on marine wildlife especially the depredation of the massive Anchovy shoals and the sea birds that prey on them.

Research that began in the late 1950s discovered that at the same time extensive warming of the sea occurred over the whole of the tropical Pacific and this had implications for the whole of the climate in the southern hemisphere.

The El Niño phenomenon is now given to the ocean circulation changes that occur in the Pacific Ocean.

An El Niño year is one when the warming effect was particularly pronounced as in 1997-98, when in January 1998 the warm water extended far into the eastern Pacific. When there are unusually cold sea temperatures in the eastern Pacific early in the year it is described as a La Niña year. La Niña means 'The Little Girl'.

Further information, including the latest sea temperatures, can be found on the El Niño Web Site, <http://www.pmel.noaa.gov/toga-tao/el-nino/home.html>.

NOTES

- 1 Frank Buckland was a popular writer on natural history and fisheries in Victorian England.
- 2 Details of how a crab changes its shell can be found on the British Marine Life Study Society (England) Web Site.

Andy Horton, on behalf of the British Marine Life Study Society, will help readers who have any difficulties to pursue their interest in the marine life around the British Isles. The first enquiry will be answered free of charge but please enclose a return stamp and do not forget to include your address. Telephone calls should be made during office hours. For more information please write to: Andy Horton, Shore Watch, British Marine Life Study Society, Gloucous House, 14 Corbyn Crescent, Shoreham-by-Sea, Sussex, BN43 6PD. Email: bmlls@compuserve.com Web Site: [BMLSS \(England\) URL= http://ourworld.compuserve.com/homepages/BMLSS/BMLSS](http://ourworld.compuserve.com/homepages/BMLSS/BMLSS) (Scotland) URL= <http://www.ed.ac.uk/~evah01/bmlss.htm> The Webmaster for the Scottish site is Alan Pemberton.

Derek Lambert turns his attention to the Tetras

PHOTOGRAPHS BY THE AUTHOR

The A&P Costa Rican Quest



Quebrada de Motel del Sur.

In almost every habitat we fished in Costa Rica we found or saw larger numbers of Characins. Unfortunately, though, throughout much of the country the only species we saw was *Astyanax fasciatus* which can be found throughout much of Central America and are rarely kept as aquarium fish because they are rather aggressive in community tanks.

Before I went to Costa Rica,

We eventually found our first *Hyphessobrycon savagei* in the Quebrada de Motel del Sur living in exactly the same sort of habitat Tetras the world over are found in

however, I carefully researched exactly which species we might be lucky enough to find and had come up with *Hyphessobrycon savagei* in the south of the country.

On checking through my books I could find no reference to this species nor any photographs either. This peaked my interest because members of this genus are widely kept as aquarium fish and often have attractive colouration.

Black Neon Tetras

The Emperor Tetra, *Nemato-brycon palmeri*.

The Black Neon Tetra, *Hyphessobrycon herbertaxelrodi*.

(*Hyphessobrycon herbertaxelrodi*), Flame Tetras (*Hyphessobrycon flammeus*) and Bleeding Heart Tetras (*Hyphessobrycon erythrostigma*) are some of the more commonly seen fish in this group but there are many others which make their appearance from time to time.

A new attractive Tetra would certainly find a market in the hobby so *Hyphessobrycon savagei* was added to the list for us to look at if nothing more.

We eventually found our first *Hyphessobrycon savagei* in the Quebrada de Motel del Sur living in exactly the same sort of habitat

THE A&P COSTA RICAN QUEST ...
attention turned to the Tetras

Tetras the world over are found in.

Water tests

This was a fairly small stream with a brisk current and water between 1

and 3ft in depth with a sand and mud substrate. When we tested the water we found a pH of 7.3, GH3 and KH2. This was certainly soft enough for any of the Tetras, although further south you tend to find the water more acidic than this.

Plant life consisted of clumps of true aquatics in the quieter parts of the river and overhanging vegetation from the banks. It was under this that the Tetras tended to gather and although we did not find large numbers of them there were still enough to bring back a collection if we had wanted them.

As it turned out they were a dull grey with just a hint of gold in the body and maybe a touch of yellow in the fins. Certainly not a great find for the aquarium hobby which explains why few people have every kept them!

Whilst disappointed at not finding a really beautiful Tetra to bring home it did give me a chance to look at a typical Tetra habitat. What I found interesting was the way it mimicked the sort of aquarium set-up where my Tetras have always done really well.

For a start I always like to have some plant cover in the tank. This might be limited to a few large Amazon Swords or it could be a heavily planted furnished aquarium in the Dutch style. These look more like underwater gardens than fish tanks but are particularly appealing to someone like me who loves gardening as well as fishkeeping.



Filtration

Another important factor is filtration. I use an internal power filter which not only keeps the water clean but also creates a strong water current for the fish to swim against. It is in the outflow of this filter that my Tetras tend to spend most of their time.

Here they swim against the current just like they do in the wild. Schools of 10 or more fish tend to clump together and cavort about, then break apart into smaller groups.

Being constantly on the move they add life and vitality to an aquarium in a way few other fish do. Some Barbs and Danios behave the same way and I often see all three groups swimming together.

Not all the Tetras are such active fish or keen schooling species, however, so I always try to create some quiet areas in the tank as well. Large pieces of bogwood with plants tucked away behind them are good for this. In the lee of these the slower moving and more solitary species will gather.

Whilst only members of the *Hyphessobrycon* genus venture this far north in Central America the group of fish which hobbyists call Tetras are much more widespread. These include some African species as well as Central and South American fish. One of my favourites is the beautiful Emperor Tetra (*Nematobrycon palmeri*) but there are plenty of others to choose from.

When feeding Tetras it is a good idea to remember they are basically carnivores which will grab at anything as it passes by. This will obviously include plant material of various types and many Tetras will gobble this down as well.

However, most do much better when fed plenty of live foods. Meat and fish can also be fed, together with a good quality flake food. My own fish usually have live food in the morning followed by several feeds of flake food throughout the day.

Egg scatterers

No article on Tetras would be complete without including at least a little about how to breed them. With Barbs and many of the other common fish groups this is very easy because they all spawn in much the same way.

Tetras, in general, are egg scatterers but some species use other breeding strategies. These include fish which pit spawn and others which breed in caves. There is not enough room to go into all of these in this article, so I shall just

deal with the egg scattering majority.

When breeding any of these I like to separate the sexes for a week or two and feed them up on plenty of live foods. During this time I set up a breeding tank with pure rainwater and add an inch of peat across the surface.

No filtration or aeration is included in this set-up so as the peat slowly becomes waterlogged it sinks to the aquarium bottom. Once this has happened I then select my breeders.

In most cases these consist of the best coloured male and the plumpest female I have. Sometimes I will use several females to one male (Emperor Tetras are better this way).

These are then transferred into the breeding tank together with a large clump of Java Moss or an artificial spawning mop. The fish are left together until I have seen them spawning (usually the next day) or I see small fry lurking just above the peat substrate.

The adults are then removed and infusoria or liquid fry food is fed. I also add a little newly hatched Brine Shrimp to the aquarium every day as well.

After a few days to a week most of the fry will be seen to be eating this and the liquid food can be discontinued. After two or three weeks small water changes (about 10 per cent weekly) are started.

To start with rainwater is used to replace the old water but when the fry reach 1cm long I start using tapwater instead. The water changes at this time are stepped up and increased in volume until 50 per cent of the water is being changed each week.

Ready for sale

I also try to siphon out as much of the peat as possible (without removing the babies) as I do these changes. Eventually the fry will be living in your tapwater and will be ready for sale to your local shop or other aquarists.

It is worth mentioning at this point that Bleeding Heart Tetras (*Hyphessobrycon erythrostigma*) will not breed in this sort of set-up as far as I am aware. In fact, for some reason this wonderful Tetra remains to this day unbred by aquarists and fish farmers the world over.

I suspect the reason for this is that most people have been trying to spawn them in the same way as other members of this genus. It could be that the spawn like Piranha and some members of the *Roeboidea* genus, with males digging a pit close to plant stems. Females are then enticed into this area and eggs are laid into it. The female is then chased away and the male guards the eggs and newly hatched fry for a day or two.

This is pure speculation on my part but it would explain why such a common fish has remained 'unbreedable' in captivity since it was first introduced in the 1950s.

For some people, like the world renowned American fish farmer, Ross Socolof, it has become something of an obsession. Despite being an aquarist for over 65 years, much of which has been spent in the fish farming industry, where he bred virtually every aquarium fish ever kept, Bleeding Heart Tetras have simply refused to spawn for him.

At one time he even went out to the wild to collect potential breeding stock himself! So, if you want to put an old man out of his misery, successfully spawn Bleeding Heart Tetras and do a write-up on it for A&P. We will make sure it reaches Ross.

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ASK A&P

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Coldwater

★ PRIZE WINNING PROBLEM ★

From James Forsyth,
Cranleigh, Surrey

Q I have Koi and Goldfish in my 'pond' which is simply a domestic house bath (redundant!) and fitted in the garden. However, the fish have grown so much I'd like to overwinter them, so:

1. When to stop feeding or not at all in winter?
2. Would a small heater help?
3. A sheet of plastic over the top on freezing nights might do, too?

A I'm glad the bath is redundant. I'd hate to think of you trekking down the garden path this weather for a soak! Usually feeding should stop when the water temperature is consistently below 10°C (50°F) and this after a period of feeding my digestible foods (wheatgerm based) to the fish as a changeover from the high protein foods of summer. This also lessens the amount of wastes produced by the fish which would otherwise add to the pollution of the pond water. As the bath may well have a relatively

low volume it is assumed that you cleared out any debris from the bottom in recent weeks to avoid any build-up of gases and algae-encountering nutrients during the coming winter months. A small aquarium heater could be introduced, not with the aim of keeping the water temperature high but more to keep an area of the water surface clear of ice which would otherwise trap any noxious gases in and above the water. A sheet of 'bubble-wrap' is also quite a good idea, too, not only to keep any warmth in but also to prevent small animals falling in and being unable to get out again (bath sides are usually both sheer and smooth, and I'm sure you removed the chain for the plug).

Q After a summer of constantly cleaning out the green stuff from the strainer on my pond pump have you any ideas as to how I can reduce this chore next year?

A This problem affects all pond owners, so you are not alone. Larger pond-strainers can obviously reduce the frequency of cleaning and Blanketweed 'controllers' may also alleviate the problem, however, help is at hand from a new item

about to be released on the market. An attachment fitted on the submersible pump effectively prevents debris from being drawn into the strainer. Naturally there is a drawback — the faster you drive the device, the less water flow you get to your filter or fountain — so separate pumps for each might be prudent, and then you'd need to buy another attachment for the second pump! See last month's Buy Lines for details.

Marine

Q I am thinking about taking up marines but am worried about the 'running costs' of constantly making up new saltwater for top-ups and water changes. Do I really have to do this so often?

A Unfortunately there is no escaping the fact that marine fish need to be kept in salt water which must be prepared (in the majority of cases for both convenience and safety) from commercially-available salt water 'mixes'. It is generally accepted that regular partial water changes (10-15 per cent every two to three weeks) is beneficial in maintaining optimum water conditions. A regular check on the pH of the water in the marine aquarium will reveal that it gradually falls over a period of time and regularly

replacing a proportion of water will halt this downward progression. However, the good news is that you don't need new saltwater for 'top-ups'. The water lost through evaporation is 'fresh' (as opposed to salt) because only the water is lost, the salts remain in solution in the water and using more saltwater to top up would result in a gradual increase in Specific Gravity over a period of time. Only 'top up' with fresh water but by all means make sure it is at the same temperature as that of the water already in the aquarium.

Tropical

Q My local aquatic shop has some new species in (well, they're new to me!); they have the usual Tetra shaped body but the single fins are bright yellow tinged with red and the caudal fin is bright red. I was told they were a *Moenkhausia* species but I can't find them in my books.

A This relatively recent introduction has a somewhat vague identification history. It was first known as *Moenkhausia columbae* but since then the plot thickens! An entry in *Baensch Mini Atlas* (No. 5) has it described as an *Astyanax* species and in the latest *Baensch Foto-Index* Volume (an Index to all previously-published



This page is generously supported by Algarde who are offering a Midi Therm Electronic Thermostat suitable for aquarium or vivarium use as a prize for the featured problem. The unit, with a 300 watt handling capacity, has two heater connections and a fully waterproof probe which senses water (or air) temperature and easy-to-follow instructions.

Baensch Atlases) gives the name as both *Astyanax sp.* and *Hyphessobrycon ecuadorensis*. However, whatever name it eventually adopts the overall consensus is that it's still a very beautiful fish. It has been bred in the aquarium but reports of successful fry-raising are varied.

Plants

Q Does undergravel heating help plant growth? Would a sub-soil heating cable do the trick?

A The practice of undergravel heating has never really taken off — maybe the thought of having to strip out the whole tank to replace a faulty element

had something to do with it — however, it is not quite as simple as it seems. Obviously the whole aquarium can be heated in this manner using a thermostat to control the electricity supplied to the buried element if so desired. What is probably in your mind is that modern research has discovered that a slight warmth in the substrate (in itself not enough to maintain the tank's required temperature) assists plant growth by setting up weak convection currents which distribute nutrients throughout the substrate for the benefit of plant growth. This low-level (no pun intended!) form of heating can be achieved using a very low wattage heating element or by utilising a buried tube to pass already heated aquarium water through the substrate.

General

Q I believe that earthworms make an excellent addition to fishes' diet. Without going into how they discovered they had a taste for them have you any tips for their culture, collection or use?

A We went to the appropriate source, Worms Direct, who came up with the following information: Earthworms (*Lumbricus sp.*, etc) may not be available at the County Fair but this live food is often overlooked. It cannot be stressed enough how complete is this staple, high-protein rich food. Earthworms are everywhere after a heavy downpour of rain and be easily collected but collecting the right sized worms can become a hassle so we breed our

supply. I keep them in a bath half-filled with quality soil kept at a constant temperature of 65°F. Once a week I spread a light coat of cornmeal on the surface to feed them. Collecting became a snap when I discovered that a damp newspaper (about eight pages) laid on top of the soil attracted the worms to gather under it — I don't think it matters what newspaper it is! Before feeding the worms to your fish they should be cleansed in peat during which time they will get rid of their soil-polluted wastes; if your fish are large then the worms can be fed whole but smaller fish will need the worms to be chopped up into more manageable pieces. Why not give your fish a Christmas treat with this really 'meaty' offering?



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Marine Life of the Channel Islands



Andy Horton's TOP 10 BOOKS

PHOTOGRAPHS BY THE AUTHOR

BOOKS OF INTEREST TO BRITISH MARINE LIFE ENTHUSIASTS

There are some very good books but no clear "best book of new original work" first published during 1998. There is very little to choose between them.

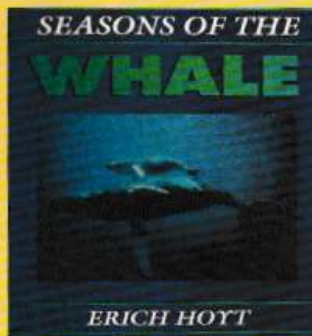


(2) SEASONS OF THE WHALE, Erich Hoyt.

Publisher: Whale & Dolphin Conservation Society, 1998. ISBN: 1-901386-03-1

"Tail flukes moving up and down, blood pumping furiously, an 80-foot-long female blue whale named June races into the gulf, hunger gnawing at her multi-chambered stomach. Her stomach is the size of a small blimp."

The story is of Atlantic whales by a serious science writer; an account of whales in their natural environment with information about the oceans so that the reader can appreciate the world in which the remnants of the whale population still survive. The account reads more like a novel than a text book following the whales on their annual migrations. Almost every page has some of the



BOOK OF THE YEAR

SUSSEX MARINE LIFE, Robert Irving. Publisher: East Sussex County Council, 1998. Price £11.50, from: Chris Durel, Sussex Marine Life, English Nature, Howard House, 31 High Street, Lewes, East Sussex BN7 2LU. ISBN: 0 86147-471-6

This guide to the undersea world off the Sussex coast arose out of the diver's survey called Seasearch. It is a colour photograph database of all the common species likely to be encountered by divers. The Sussex coast is representative of all the British coasts, being less biodiverse than the clear waters of the south and west, but more varied than parts of the North Sea. Therefore, it will be of interest to all divers, and rockpoolers as well, because most of smaller intertidal species are also to be found in the shallow seas.

best whale photographs I have seen in a book. This book answers most of the questions I get asked about whales.

(3) MARINE LIFE OF THE CHANNEL ISLANDS, Sue

Daly. Publisher: TFH Publications, 1998. Price £13.95. ISBN: 185279108-X

This is a general introductory book to the marine life around Jersey, Guernsey, and the other Channel Islands. It should appeal to both divers and rockpoolers. The 170 photographs of the common species and some unusual ones are mostly excellent and

taken underwater. They are accompanied by informative text, designed to appeal to the novice, with enough extra information for the experienced.

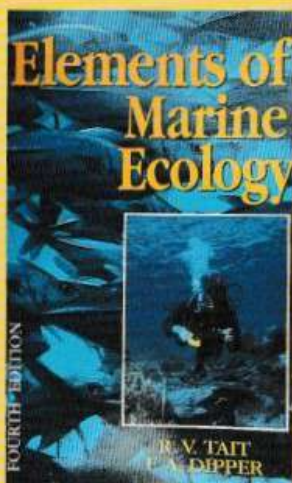
(4) **A Guide to the Selection, Care and Breeding of CORALS FOR THE MINI-REEF AQUARIUM**, Dr Herbert R. Axelrod, with colour photographs by Walt Deas. Publisher: TFH/Kingdom Publications. ISBN: 0-7938-0500-5

The book assumes the aquarist has a basic understanding of the establishment and upkeep on marine aquaria. It briefly

explains the biology of corals and then examines the requirements of each individual species with some clear and attractive photographs by Walt Deas. An important distinction is made between 'hermatypic' corals that use zooxanthellae (symbiotic algae) and 'ahermatypic' corals that are 'predators which will eat anything they can paralyse with their stinging tentacles'. Each species is colour coded with the level of experience needed in keeping them. This book is essential reading for any marine aquarist wishing to keep tropical corals. The book contains an index and bibliography.

(5) **WHALES & DOLPHINS**, Mark Carwardine, Erich Hoyt, R. Ewan Fordyce and Peter Gill. Publisher: Collins. Price £17.99. ISBN: 0-00-220105

The latest well written book in the excellent new series by Collins on various subjects of the natural world packs an astounding amount of accurate information into its 288 pages, covering whales, dolphins and porpoises throughout the world. There is a chapter by Erich Hoyt of where to go to see the big whales and a bibliography and list of organisations.

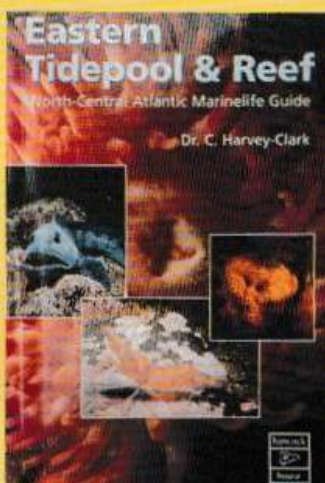


(6) **ELEMENTS OF MARINE ECOLOGY 4th Edition**, R. V. Tait and F. A. Dipper. Publisher: Butterworth Heinemann, 1998. Price £19.99. ISBN: 0-7506 2088-9

In 1968 Ronald V. Tait wrote this book, as an important text for students studying marine biology. Since that date it has become the standard book on marine ecology and has been reprinted on numerous occasions. This fourth edition is under the co-authorship of Frances Dipper and updates the earlier version with some improvements whilst retaining the order and format of the original. The book covers all the oceans of the world and contains a comprehensive bibliography updated from the earlier editions.

(7) **SEALS & SEA LIONS**, David Miller. Publisher: Colin Baxter Photography, 1998. Price £11.00. ISBN: 1-900455-46-3

This interesting well written book provides a comprehensive introduction to the Seals and Sea Lions of the seas of the world, and their relationship with Man. It covers all aspects of their lives including feeding, breathing underwater and their breeding cycle. Individual species of Seals and Sea Lions are not



featured on their own pages, but the Index chapter gives the common and scientific names, general distribution details, brief details of their diet, length and average weight, and the estimated world population. The high quality paperback contains 72 pages including 43 excellent colour photographs.

(8) **EASTERN TIDEPPOOL & REEF: North Central Atlantic Marine Life Guide**, Dr C. Harvey-Clark. Publisher: Hancock House (available through Gazelle Book Services, Tel: 01524 68765). Price £7.99. ISBN: 0888 394063

This is a general guide to the species commonly encountered on the American side of the North Atlantic. It is interesting to British marine enthusiasts because some of the species are identical to those found on the European side and others are similar.

(9) **THE SPECIES DIRECTORY OF THE MARINE FAUNA AND FLORA OF THE BRITISH ISLES AND SURROUNDING SEAS**, edited by C. Howson and B. Picton. Publisher: Ulster Museum & the Marine Conservation Society, 1997. Price £70 approx.

The project to collate the species that live in the seas off Britain is an ongoing project. The Directory is a list of all the species grouped systematically according to their scientific names, with a comprehensive bibliography. The 1997 edition, not available until 1998, is the latest list and is useful on the rare occasions (about once a week for me) that I have to look up a vagrant, unusual species that is not listed in the usual identification books. I am waiting for the list to be produced on a CD-ROM when it will be truly useful.

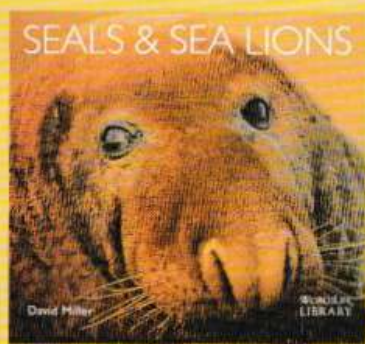
(10) **THE LIVING SEA — SEA LIFE ALONG THE NORWEGIAN COAST**, text by Stein Mortensen, photographs by Per Eide. Publisher: KOM Forlag as Vågeveien 10, N-6500 Kristiansund, Norway. Phone: +47 71 67 83 00. Fax: +47 71 67 83 60. ISBN English Edition: 82-908-2334-7

Books now need to be more specialised or deal with other parts of the sea to contribute anything new. The Norwegian seas are particularly interesting and share many species



with the Scottish seas, and this book includes excellent large photographs of species, although present in British seas, have rarely been captured on film. Examples include the King Crab Lithodes, The Tadpole Fish, Rabbit-fish, Spider Crab Hyas, Herring eggs, and underwater vistas of sea anemones and soft corals.

The well-written text translated into English has a unique Norwegian angle with their own special habitats called fjords, and polls, as well as the maelstrom currents. The Norwegian coast has suffered from problems with plankton blooms and these are briefly discussed. This is a very interesting book. Readers interested in Norwegian marine wildlife can find the work of other photographers via the BMLSS (England) web page.



BUY LINES

NEW PRODUCT REVIEW

ALPHA AQUARIUM

For some years now freshwater fishkeepers have been in a quandary. The rapidly deteriorating quality of their supply water has led them to embrace the benefits of reverse osmosis technology, but the loss of general and carbonate hardness taking place in the processing of the water has forced them to mix in with this pure product a proportion of the very tap water they were trying to avoid!

Now an aqualine — a company within the highly regarded AquaMedic group of German aquarium businesses — have produced two products to overcome this problem.

Aqua + GH will replenish the total hardness and Aqua + KH will replenish the alkalinity reserve or carbonate hardness.

The products are presented in tablet form and provide a simple and accurate way of preparing reverse osmosis water for the most delicate freshwater aquaria.

To enable these products to be used to maintain the correct hardness levels after the initial fill testing is required and the relevant FreshCare tests from Red Sea Fish pHarm are ideal for this application.

These tests were highly recommended for their accuracy and value for money when they were released and the GH and KH tests form the perfect partners for the new aqualine products.

Both aqualine products cost £12.50 for 200 tablets. For Aqua + Gh four tablets will raise the GH of 100 litres of water by one degree, and for Aqua + KH three tablets will raise the KH of 100 litres of water by one degree.

Both the FreshCare GH and FreshCare KH test kits cost £5.30 for 25 tests.

• All the above products are only available at the best aquatic outlets — in case of difficulties please contact us as distributors: Alpha Aquarium, 62 High Road, Byfleet, Surrey KT14 7QL.
Tel: 01932 353600.
Fax: 01932 349718.

ORBECO-HELLIGE

Orbeco-Hellige announces the introduction of Mini Analysts — a series of easy to use dedicated water analysers.

Thirty four individual Series 942 models are

available including Chlorine (DPD), Copper, Lead, Silica, Molybdenum, Iron, Nitrate, Fluoride, Phosphate, Dissolved Oxygen and Chloride for a variety of water/wastewater testing applications.

All models feature one touch operation, automatic zero and standardisation, factory calibration and LED narrow band light source for high sensitivity.

Most Mini Analysts are pre-measured reagent tablets which are safe, pre-measured and economical to use. Tablets are hermetically sealed for long life.

All models are powered by four AA batteries (supplied) and come complete with operating instructions, carrying case and reagents for immediate testing. All models are CE certified and come with a three-year instrument warranty.

The many uses and applications which Mini Analysts have include testing drinking water, waste water, boiler and cooling water, water conditioning, surface finishing, power generation, chemical and petroleum processing.

• All details are in Bulletin No. 942, available from: Orbeco Analytical Systems, Inc., 185 Marine Street, Farmingdale, NY 11735.
Phone: 516-293-4110
Fax: 516-293-8258. Website: www.orbeco.com
e-mail: service@orbeco.com

BIOPLAST

Today's tap water can certainly not be regarded as ideal aquarium water as chlorine, heavy metals and other adverse substances are highly detrimental to the well-being of fish and plants.

Aquaclean, the water conditioner from BioPlast, is more than just a dechlorinator and is probably far longer established in making water safe for fishes (more than seven years) than most aquarists realise.

This biological effective freshwater conditioner also neutralises adverse substances and offers tangible protection for the fish's gill and membranes. It also promotes bacteriological self-purification of the water and enhances the colour intensity and general well-being of all freshwater fishes.

Whilst being highly recommended for use during regular partial water changes Aquaclean can also be used to good effect during fish transportation to shows and especially in the setting up of new aquariums.

Like all BioPlast 'fish and plant friendly' products AquaClean uses naturally occurring bacteria to break down chloramines, ammonia and to also clean the water. Readings of water tests (for ammonia and so on) will not be affected.

AquaClean comes in three convenient and very competitively priced sizes — 100, 250 and 500 ml — and are easily spotted on the dealer's shelf by their distinctive blue caps.

The BioPlast slogan is, and will be: NATURE, and natural solutions to aquatic problems; chemical solutions may well be less expensive and the use of enzymes may give rise to worries on ethical grounds but care for the environment and lessening the risk of pollution is the company's concern above all else.

The AquaSensor is an electronic test and control device that is widely used in the professional aquatic scene. It will constantly measure and control the biotope of your aquarium with precision and long lasting reliability. As with all BioPlast products emphasis is on a sturdy design with highest quality and workmanship. With its integral and unique design the appliance will form an harmonious part of any aquarium set-up. It performs a number of important functions, yet is easy to use.

AquaSensor pH measures and controls the pH value in your aquarium. It can be used as a hand-held, battery-operated pH test device as well as a fixed installation, with mains and control module, to automatically control the pH value.

All life forms in the aquarium react very sensitively to fluctuations of the pH value. If the pH value increases over and above the required setting and the control socket will automatically be switched on.

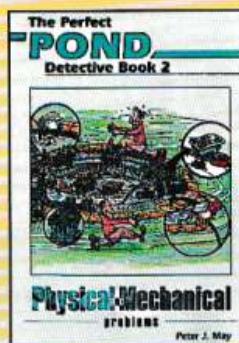
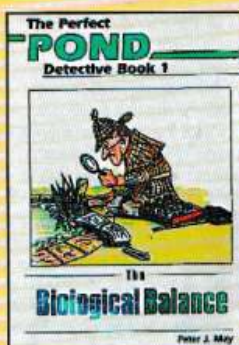
A BioPlast CO₂ stop magnetic valve can be plugged into the socket. It will automatically, via a compatible professional CO₂ supply unit, like the BioPlast CO₂ ProfiStar Set, release the correct dose of CO₂ gas into your aquarium until the required pH setting is reached.

The AquaSensor needs no screwdriver to assemble and comes with all cleaning and calibrating fluids, test vials, connection cables, test probe, full installation and operating instructions, etc.

• For further details contact: BioPlast Pet Ltd., PO Box 1212, Rugby CV21 2ZH.
Tel/Fax: 01788 544298.

The Mini Analyst water analyser from Orbeco-Hellige.





The Perfect Pond Detective Book 1

Author: **Peter J. May**

Publisher: **TFH/Kingdom**
Price: **£10.95**
ISBN: **185279098-9**

The Perfect Pond Detective Book 2

Author: **Peter J. May**

Publisher: **TFH/Kingdom**
Price: **£9.95**
ISBN: **185279099-7**

Once you have a pond then your troubles start! Well, that's not entirely accurate but there are times when it seems like it. It is all too easy for the established pondkeeper to fix things by drawing on years of experience but in this 'time-conscious' age many people not only want instant success they also require instant remedies for anything that causes a setback in their plans.

Of course, the answer to most things is understanding how they work and these two books by the well known water garden designer and consultant, Peter J. May, will provide the answers to your problems.

BOOK REVIEWS

Just in time for Christmas there are a number of books just released which will appeal to most aquarists

Following hard on the wheels of his Perfect Pond Recipe Book each volume covers a different area of pond problems.

Book 1 looks at the Biological Balance of the Pond, how the inhabiting lifestyles balance each other, how to plan so they do and what to do if they don't! However, the problems don't start right away for there is an excellent early chapter on avoiding the problems with sound beginning advice on most aspects of pond installation and stocking.

A yearly survey of the pond's life follows before the questions start with 'Why in the biological do I need a filter?' (By now you will have latched on to the author's sense of humour — backed up by his equally amusing original artwork.)

Further chapters explore water and fish problems (a comprehensive flow chart helps you to navigate around fish problems) and no little attention is given over to resurrecting old ponds (complete with very sound safety tips, too); the pond's bad guys are clearly explained and suitable plants for the natural and ornamental ponds are included.

Book 2 is entitled 'Physical and Mechanical Problems', which means if it's going to go wrong it will. Expectedly dealing with all things mechanical this volume also includes solving water loss troubles (you'll never believe the number of possible things to consider), filtration systems and, of course, pumps. A list of useful chemicals is also included.

Both books are well worthy of shelf space, but readers already familiar with Peter's prowess as an artist will be sad to see that his artwork isn't reproduced with as much clarity as might be desired — maybe adding colour has muddled them too much?

The first volume also suffered with one or two wrong spellings in the disease section. However, as the author says in his introduction to volume one,

welcome to the 'muck and magic' of pond maintenance. You will learn a lot from both these books.

DICK MILLS

Questions & Answers Manual of The Tropical Freshwater Aquarium

Author: **Gina Sandford**

Publisher: **Interpet**
Price: **£15.99**
ISBN: **n/a**

Since Interpet acquired the publishing rights from Salamander Books it has begun producing books on its own behalf. This latest release (in association with Andromeda Books) is not an unexpected one as Interpet have already released similar titles dealing with Marines and Reptiles/Amphibians.

Following the pattern of its predecessors this new manual should not be taken as a guide to fish species as such for, while a good number of species make an appearance (some only in the text), the detailed information given is pertinent to each group of fishes as is merited by them all.

Whilst the work expectedly gives the major proportion of space over to the livestock (including plants) experienced fishkeepers will be delighted to see that of the opening segments Water Management gets by far the most coverage, over and above the other important areas such as breeding, feeding and health matters.

That is not to say that other subjects are sidelines, holiday plans are included as is the increasingly important area of conservation and fish-related laws.

Of course this is a problem solving book but throughout

the author stresses the need to obtain as much advance information as possible before putting the fish at risk because of your own fishkeeping inadequacies.

By reading about the problems likely to be encountered, being forewarned is to be forearmed, with the knowledge not to fall into the pitfalls clearly outlined along the way. As before the questions (and answers) pop up in the text just at the right moment, so before you know it you'll be off setting up that new tank and looking forward to the day when you can safely introduce your fish and begin successful fishkeeping.

DICK MILLS

Mergus Aquarien Atlas Foto Index 1-5

Authors: **Hans A. Baensch and Dr Gero W. Fischer**

Publisher: **Mergus**
Price: **£30.00**
ISBN: **3-88244-066-X**

The Aquarien Atlas series of books from Mergus has set the standards for authoritative reference books, especially amongst show people and judges. With already five freshwater books plus three marine related volumes — to say nothing about one on fossils (of fish, not judges!) — things were getting decidedly heavy to carry them around.

The latest release (still in German, unfortunately) is a single volume which comprises a photo index of the five freshwater volumes. Divided into familiar popular groups — Characins, Cichlids, Gouramis, Catfish, Livebearers, etc.) — this book is destined to become the most carried around book by all concerned in fish identification and hopefully it should solve most problems without causing too many arguments.

Each species illustration is accompanied by scientific and common names, sex differentiation where possible, size, country of origin, foods, breeding, water conditions, and so on — you don't need a knowledge of German to read this information, either.

A wealth of information is in this book and it should be top of your Christmas list (even if you have to buy it for yourself!)

DICK MILLS

Kathy Jinkings gets involved in showing

PHOTOGRAPHS BY THE AUTHOR

Showing an Interest



The prize winning (OK, third!) Crescent zoe.

Although, like most aquarists, I am personally convinced of the perfection of my own fishy treasures, I had never exhibited them at a show in the belief that they would be stressed by this activity.

Although I am convinced of the perfection of my own fishy treasures, I have never exhibited them at a show in the belief that they would be stressed by this activity

However, when a pair of fish I had subjected to a long train journey and a weekend away promptly spawned on their homecoming, I decided that perhaps they didn't find travel quite so debilitating as I had supposed! With this in mind I set about selecting a small group to try their luck at the

1998 Fish World exhibition.

Selecting the fish was not so easy. The Federation of British Aquatic Societies publish a booklet detailing the required sizes for fish; although there is nothing to stop smaller fish being exhibited they will lose marks and be unlikely to win any prizes.

This size list held a few unpleasant surprises. The Bronze Corydoras I was particularly proud of, while being oversize at 7.5cm according to the rules of the Northern Area Catfish Group, was revealed as not good enough for the FBAS — half a centimetre under the required length.

This shows that it is necessary to check the guidelines of the governing body of the particular show you are exhibiting at — different bodies have different rules and different sizes.

During this phase of the operation I realised that I may have got the wrong end of the stick about the stress — the fish regarded me with bored equanimity as I approached the tanks waving my ruler yet again, but I was beginning to feel decidedly stressed!

There is a cunning device in the shape of a 'reflecting' ruler which can be used to measure fish but without the foresight to own one of these I was reduced to either catching the fish or feeding them at the front and waiting until they were broadside on against the glass.

Finally, after a lot of bribery, the

fish were selected, and it was then necessary to find tanks suitable for them to be exhibited in.

Show tanks are simple all-glass constructions — they need to be of a sufficient size for the fish to be able to turn round, and to have a glass lid to prevent the inmates from jumping out. The bottom of the tank (outside!) may be painted black to make the fish feel more secure and to show them off to advantage, but since the tanks are usually placed on a black cloth at the show this is not essential.

Although there is not a maximum tank size both tanks and water soon add up the weight and it is sensible not to exhibit the fish in tanks larger than they need.

At this point another element of stress made itself known. In the excitement of discovering that my Whiptail Catfish was not only big enough to meet the show sizes but exceeded them by a good 6cm I had omitted to consider what I was going to show the fish in.

My collection of show tanks, which had previously doubled as egg-hatching receptacles, were all about 8in long and 4in wide. Quite obviously a foot long catfish placed in one of these was going to find turning round the least of his worries.

Now in full-scale panic mode I made a desperate phone call to Fur and Fins of Redbourn, who agreed,

at a week's notice, not only to produce a suitable tank but to deliver it to their stand at the exhibition for collection. With the problems of the fish and their accommodation solved it remained to go through the Show Schedule to decide which classes the fish would enter.

The FBAS rules dictate that there is a wide variety of classes for different species of single fish. Others are for breeders to show their skills, with six juvenile fish from a single spawning making up a single entry, while full grown pairs of fish can also be entered in yet more classes.

There are also classes for furnished aquaria, but I thought I had my hands full just dealing with the fish, without considering decor and plants as well. Apart from the furnished aquaria show tanks must be absolutely bare, containing only the appropriate fish and water.

Once the right classes had been decided it remained only to phone the Show Secretary to register my entries. Most shows appreciate entries being made in advance — on the day everyone is very busy, and it is far easier if the organisers just have to hand out a bag of ready-made out labels than if they have to document all the entries there and then.

With the preliminaries out of the way, it remained only to actually get



Rineloricaria sp., a loser in prizes but winner for volume of water carried!

the fish to the show — as well as a large quantity of water. While it is easy to transport a fish in a plastic bag, the same volume of water emptied into a show tank is liable to leave the fish with half of it stuck above the water surface.

Water cannot simply be taken from taps at the destination, as the local water will probably have a composition to the water the fish are used to. Such a sudden swap could well prove fatal, and at the least leave the exhibit looking decidedly unhappy and under par.

The large catfish in particular again posed a problem; it requires a great deal of water to fill a tank that is 2ft long and 1ft wide. All this water had to be dechlorinated and transported to the show. I elected to use two cool boxes and a camping water container for the purpose, but a wide variety of receptacles can be pressed into service once you are aware of the need for them.

On the great day the installation of the fish on the show bench was the easy part, once all the water had been lugged from the car. This is simply a matter of collecting the (pre-arranged) labels and affixing them to the tanks containing the relevant fish.

The tanks are then placed on the show benches, where different areas are marked out for each of the classes. A little forethought turned out

SHOWING AN INTEREST ... getting involved in showing

to be useful here, too — siphon tubes and jugs are essential for filling, and later emptying, the tanks, and in the case of oxygen-sensitive fish a small battery-powered air pump is a useful device to have in case of emergencies.

With my fish lodged safely in position for the day I could look around the competition. Stress was once again widely evident here — in the hordes of exhausted fishkeepers heaving large volumes of water up the stairs and wandering up and down aisles desperately looking for the class for their charges.

In their tanks the fish sailed serenely, oblivious to the tribulations of their owners. The superb array of fish at a show is well worth looking at, even for those uninterested in showing themselves.

Each of the fish has been chosen as one of the best by its proud owners, and all are unmarred by fin damage or disease — fish at the peak of fitness, which are an inspiration to any aquarist.

Even after reading all the helpful FBAS booklets I still had several questions unanswered, and, fortunately, Bob Esson, one of the judges, was kind enough to discuss these issues.

It takes several years to become a judge, and once the honour has been achieved they are constantly subject to review. As I am particularly interested in Loricarid catfish, of which many new species are emerging almost on a daily basis, I was interested as to how they could judge these fish fairly, especially with regard to size.

When Bob demonstrated the immense library he carries around with him to every show it seems fair to say that it would be a very rare fish that could not be found in his documentation.

The four large bags of books he carries include all the volumes of Baensch (including the German-only ones), the Aqualog books, and many others. Evidently no-one can know everything, and the judges have a large amount of literature on hand as back-up, as well as being able to share expertise with each other.

The size question of each species is continually subject to review — if a large number of exhibits begin to fall short of the specification or to exceed

For anyone interested in showing their fish the following FBAS publications are available from Roger Crew, c/o NMP Albany, 55, Parkhurst Road, Newport, Isle of Wight, PO30 5RS.

Booklet no 1: Cultivated Tropical Fish National Standards
Booklet no 4: National Goldfish Standards and Technical Information
Booklet no 5: Show Rules, Constitution and Technical Information
Booklet no 6: 1998 Size Book

If the show you are planning to enter is not run under FBAS rules you will need to obtain the correct information from the appropriate governing body.

it the judges fill in reports which will probably result in a revision in the next year's size guide.

New species encountered are also added to the reports so that they can make an appearance in the next year's revision.

Goldfish are not subject to any size criteria — a small Goldfish can be judged equally as good, if not better than, a large one. This seemed a little unfair, as to my inexperienced eye many young Goldfish look as though they will grow into fine specimens, only to have fins fold under their own weight and acquire droops as the fish grows.

Bob explained that to someone experienced in judging these fish the proportions of a fish at any given age give forewarning as to its future potential, and that, therefore, the larger fish are not under a disadvantage as I had supposed.

Even experts can make mistakes, and if an exhibitor feels (reasonably) that his fish has been unfairly judged then he can question the decision for reassessment. If a serious grievance is found then complaints can be lodged with the governing body. Most of the time, however, people agree (even if grudgingly) that the best fish have won.

At the end of the day I had one Third Place to show for my efforts, which considering it was my first entry I was quite happy with.

I was somewhat less pleased, however, that the prize was won by the smallest fish, who could have travelled in a milk bottle quite happily, rather than one of the giants happily sloshing around in gallons of water!

I shall certainly be entering other shows and can recommend it to anyone. There is a great deal of hard work involved in preparing, lifting, and carrying, but the fun of participating, the friendliness of the other competitors and organisers, and the satisfaction of achieving recognition for your fish (no matter how small) makes the entire endeavour worth while.

None of the fish have suffered any ill effects for their day out, and the Bristlenose, who obviously finds travel an aphrodisiac, is once again a proud father!

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Famous Faces in Fishkeeping

A&P: How long have you been in fishkeeping and what started you off?

JS: Although I kept fish as a youngster before the war my serious fishkeeping started in 1949 when I purchased a secondhand wooden furnished tank.

A&P: Can you remember your first aquarium and what you kept in it?

JS: This wooden tank contained Shubunkins of doubtful parentage. Unfortunately, if the aquarium was allowed to dry out the wooden frame shrank and the tank leaked and as it stood on our new utility sideboard my wife was not impressed. However, one tank soon became a dozen of the angle-iron framed variety and I made a couple of cement ponds in the large garden of our house.

A&P: What are your special interests (favourite fish, plants, equipment, photography, travel)?

JS: My special interest was and is once again Fancy Goldfish and foreign and native coldwater fishes. I lived near Charlie Whitehead and so reasonable fish were not too hard to come by.

A&P: Are you into breeding?

JS: The lure of tropical fish with their many forms and colours could not be resisted and I soon had a good selection and bred many Barb, Danios Cichlids and Livebearers as these fish were more suited to our very hard water. I still have 22 tanks and seven ponds of mostly coldwater species but am finding them more difficult to cope with as the years go by.

A&P: Do you belong to any aquatic society?

JS: I joined the Portsmouth Aquarist and Fishkeeping Club as it was then called in 1951, becoming its Secretary in 1952 and later its Chairman, a position I held for over 25 years. I founded the Association of Southern Aquarist Societies in 1962 covering the coastal area of Dorset, Wiltshire, Hampshire and West Sussex, in order that clubs could support each other's activities and that we could undertake joint ventures. If you were a member of one of the constituent clubs you became an Honorary Member of all the others and could attend their meetings. We still exist today although in much smaller numbers. In March of the same year I became an FBAS judge and have travelled the length and breadth of Britain in my three-wheeler Robin Reliant, of which I have owned 12. If you look carefully along the old A3 you can just see a rut made by the front wheel over hundreds of journeys. I took on the post of Federation Minutes Secretary in 1968 and stayed until 1994 with two short breaks in between.



A&P meets the faces behind the names and lets them tell you of their own individual aquatic interests.

This Month:
JACK STILLWELL,
President of the FBAS

A&P: What do you think about fish shows?

JS: Although fish shows are an important part of the hobby they are not the be all and end all of the hobby. They do, however, give your club a lift each year. We do not hold Open Shows now as public exhibitions do more to enhance the hobby in the public's eyes. There are less restraints and we can give so much more information. I do give fish talks to clubs but because of health problems restrict these to my own area; they are the best form of public relations I know.

A&P: If money was no object what aspect of the hobby would you like to follow?

JS: In 1960 I kept my first tropical marine tank containing four small fish each of which cost me a week's wages and although I did everything wrong (no filtration or indeed any water movement) I kept them for over three years. Living near the sea I had already had a go at keeping our local marine life. In fact I was nearly shot on one occasion by a sentry guarding the bridge to Whale Island Royal Naval Gunnery School as I was collecting

seawater from the harbour; he just would not believe me when I explained what I was doing! So I think I would pamper myself with a marine tank and do it properly this time.

A&P: What fish would you never keep and why?

JS: I have never kept large catfish, they are far too ugly, often nocturnal and require more room than most aquarists are prepared to give them, and, worst of all, there is little possibility of them breeding in captivity.

A&P: What's your favourite aquarium book?

JS: When I started in 1949 the only book on the market was *Little Ditchfields Tropical Fish*; it contained nine Characins, eight Barbs or Danios, two Killies, four Labyrinths, one Catfish, one Cichlid and four Livebearers, all that was available in this country and it cost 4d (four old pence). I well remember Innes' book coming on to the market — in those days there was nothing like it and it became a must for every tropical fishkeeper, indeed it was our bible for many years. It was not until much later that Gunther Sterba's *Freshwater Fishes of the World* was published and in my opinion it is still the best single book. In those early days we relied on *Aquarist and Pondkeeper* to keep up to date. I still have over 100 of them, going back to a 1927 *Aquarist and Pondkeeper*.

A&P: How do you think fishkeeping is keeping up with other modern day attractions?

JS: Unfortunately, the natural sciences have always been the poor relation to the technical sciences and our hobby with others have suffered at the hands of television, videos and computers and we are only just realising how important they are if we are not to destroy our world.

A&P: What do you get from fishkeeping that keeps you interested?

JS: Although active participation is getting harder year by year I still get excited when confronted with an unfamiliar species of fish, especially if it's a coldwater one. I love the social scene and chatting to other fishkeepers about their experiences and regular visitors to Weston will know I can still do "proper dancing!"

A&P: What's next in your fishkeeping plans?

JS: Well, I hope to see out my term as Federation President at the end of 1999 and then to gradually ease down on my commitments. I really have enjoyed my hobby and can recommend it to anyone. I still aim to be around for a few years yet!

AUCTIONS & EVENTS

1 December
Gloucestershire A.S.
Twiggworth Lodge,
Tewkesbury Road,
Gloucester. 8pm. Slide
Show. Topic to be
arranged. Information from
Andy: 01452 372948.

15 December South Park
Aquatic Study Society,
8pm. Wimbledon
Community Centre, St
Georges Road, Wimbledon
SW19. Christmas Social
Evening. Further
information from Ken
Scotton, 0181-641 2848.

1999

28 March Merseyside A.S.

4 April Oldham A.S.

25 April Robin Hood A.S.

9 May C.A.S.T. 88

13 June Tarnside A.S.

27 June St Helens A.S.

25 July Merseyside A.S.

5 September Alden A.S.

12 September Silkstone
A.S.

26 September Darwen
A.S.

3 October Halifax A.S.

8 November Merseyside
A.S.

21 November Northern
Area Catfish Group



Ryan does more than hope!

The National Junior Fishkeeper's Association staged the final round of its brain-torturing Tetra AquaQuiz at the recently held Supreme Festival of Fishkeeping. Answering more questions correctly than most of the adult audience could have done Ryan Hope emerged triumphant from a tense tie-

breaking situation to claim his prize from David Pool of Tetra.

Keith mows 'em over!

The culmination of Aquarian's AquaChamp Competition, the final round, took place at the British Aquarists Festival in Manchester, with Keith Mower the winner.

SHOW DATES AND FESTIVALS

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

1999

6 March F.B.A.S. General Assembly

7 March Eastleigh A.S.

7 March F.N.A.S. Annual General Meeting

20/21 March Yorkshire Aquarists Festival, Doncaster (Y)

21 March Northern Area Catfish Group Convention

4 April Oldham A.S.

11 April Aberlure A.S.

25 April Robin Hood A.S.

25 April Strood A.S.

1 May Southend, Leigh & D.A.S. (FB)

9 May Corby & D.A.S. (FB)

14/16 May Grocklemaria, I.O.W. (FB)

5 June F.B.A.S. General Assembly

6 June Erith A.S.

13 June Bracknell A.S.

13 June Tarnside A.S.

19 June Bristol Tropical A.S.

27 June St Helens A.S.

25 July Merseyside A.S.

1 August Three Counties Area Group

3 September F.B.A.S. General Assembly

5 September Alden A.S.

12 September Silkstone A.S.

19 September Northern Area Catfish Group Open Show

26 September Darwen A.S.

3 October Halifax A.S.

23/24 October British Aquarists Festival, Manchester

4 December F.B.A.S. A.G.M. & General Assembly

Tyson's triple whammy

It's been one of those years for Tony Tyson, of Bracknell A.S. The familiar figure, surmounted by multi-badged safari hat, has more than its normal jaunty saunter, the smile even broader.

All because Tony has pulled off a tremendous triple triumph at three of this year's major aquatic festivals.

First there was the British Open Fish Championship, held at Fishworld '98, then the Champion of



Champions at the British Aquarists Festival, and, finally (just in time to make this headline news in Society World) at the Supreme Festival of Fishkeeping Tony managed to take all three top honours with his *Leporacanthicus galaxias* catfish.

Now, if it hadn't been for that *Paratilapia bleekeri* at the Yorkshire Aquarists Festival ... well, there's always next year, Tony!

PHOTOGRAPH:
A&P LIBRARY

Interested in Cichlids?

Join the British Cichlid Association and save money! All new UK membership applications received and processed before January 1 1999 are at the special rate of £12.50 single, £13 joint.

Send your details, with cheques made payable to the BCA, to: BCA Membership Secretary, Ken Hilton, 248 Longridge, Knutsford, Cheshire WA16 8PL.

Membership of the BCA is the ideal Christmas present to yourself, so join now — a whole new world of fishes and fishkeepers will be opened up to you!

Meet the Societies

SOUTHEND, LEIGH & DISTRICT AQUARIST SOCIETY

Southend-on-Sea is not just a holiday town but an established fishkeeping area. Within the local vicinity is a concentration of aquatic shops that is probably one of the densest in the country.

As a result, there is a good variety of fish available. Southend is also the place where our club meets, namely Southend, Leigh & District Aquarist Society.

The club was established in 1935 (or before), making it one of the oldest societies in the country, being a founder member of the Federation of British Aquatic Societies. Although an established club our present membership is always forward thinking and we try to keep up to date with the advances made in our hobby.

We have held an Annual Show for many years and have had upwards of a thousand entries in the past. Unfortunately, lifestyles have changed and, like all clubs, we have seen a reduction in our entries (hint: next year's show will be held on Saturday, May 1 1999!). In the past we have even had the show on Southend Pier, the longest in the world.

Our members range from those with one community tank to those with a hundred tanks. Interests are in Killifish, Rift Lake Cichlids, Goldfish, Guppies, Livebearers, Anabantoids and many others. Some of our members have even been to Mexico to collect livebearers. Others enjoy showing fish, but above all we like to find out how we should maintain our fishes and achieve success in breeding them. Four of our

members are 'A Class' FBAS judges. How many other societies can boast of that?

Our meetings are held twice a month and we attempt to have a varied programme so that all the members' interests are covered. There is also Table Show, Raffle and Aquatic Goods for sale. Members are welcome to bring along their excess fish for sale. The most important aspect of the meetings, however, is to meet and talk with each other, to swap information — occasionally about fish!

Our auctions are a favourite with many local clubs and these allow our members to chat with other fishkeepers. We are involved in the restarting of the Association of Essex and East London Aquarist Societies, in order to hold events such as inter-clubs and garden visits involving all of them.

SLADAS belongs to the Aquatic Conservation Network because we want to aid in the upkeep of natural populations of fish and are interested in the welfare of these.

Our meetings are held at St. Andrew's Hall, Southview Drive, Westcliff on Sea, Essex, on the first and third Tuesday of each month, starting at 8.15pm.

As to finding out further information contact: Chris Cheswright, at 2 Cedar Avenue, Wickford, Essex, SS12 9DT. Tel: 01268 472095, or e-mail chris.cheswright@cableinet.co.uk

A Helping Hand in the Water Garden with Marigold

Just got around to cleaning up your pond for winter? A messy job at the best of times but help is literally "on hand" for 50 lucky

readers in this super Marigold Glove offer. The Marigold Outdoor Glove is part of the Marigold range. It's a heavy duty black latex glove, ideal for water gardening (and indoor aquarium use, too), and will protect your hands from leading makes of detergents and cleaners, as well as being dirt and waterproof. All Marigold housegloves are hypoallergenic and have a natural flock

lining for added comfort.

A&P have teamed up with Marigold to offer 50 pairs of Marigold Outdoor Gloves for all

of you keen water gardeners. For a chance to win just send your name and address on a postcard to: Aquarist & Pondkeeper/ Marigold Outdoor Offer, Alexander House, 38 Forehill, Ely, Cambs, CB7 4NJ.

For further information on the Marigold range please contact Alison Turner, Freephone 0800 456 837.



You Write ...

Dear Sir,

I agree wholeheartedly with Derek Lambert's thoughts on preserving wild stock in their pure form. All too often when similar species are kept together in the confines of an aquarium the most dominant male in the tank will attempt to mate with females of other species.

This, for example, happens when endangered Lake Victorian Haplochromine cichlids are kept together and I expect also sometimes happens when different Limias are kept together, although I have not observed this in my limited experience with Limias.

However, for aquarists with just one or two aquariums, who do not have a fish house with lots of tanks, keeping like species together might be the only option. The answer, of course, is not to save any fry.

When I kept the Blue Limias and the Hump-backed Limia together I spent many hours over a few months observing their behaviour as their aquarium was in the laboratory where I worked. What I noted was that my single male Hump-backed Limia was the dominant livebearer.

However, rather than try and mate with other species, he attacked both male and female Blue Limias, who, therefore, stayed away from his patch. The male Blue Limia for his part never went anywhere near the female Hump-backed Limias.

In conclusion, I do agree with Derek Lambert's point of view. However, it would be a shame to restrict Limias to the 'experts' while preventing the general aquarist with just one or two show tanks, who are not interested in breeding, from enjoying keeping Limias because they have been told that they must only keep one species per tank.

Iggy Tavares

Letters for publication should be addressed to: The Editor, MJ Publications Ltd., 20 High Street, Charing, Kent TN27 0HX