



FEBRUARY 2005

Tropical Fish

THE UK'S ONLY DEDICATED TROPICAL & MARINE FISH MAGAZINE

SHOW REPORT

**FROM THE INSTANT
OCEAN SEMINAR**

MARINE SPECIAL

**MAKE SURE ALL YOUR
FISH MINGLE**

GALWAY ATLANTAQUARIA

**A VISIT TO IRELAND'S
NATIONAL AQUARIUM**

PLUS

★ CICHLID PROFILE - BREEDING FOR PROFIT ★ MARINE CREATURES OF THE NIGHT
★ TROPICALS IN THE WILD - THE ORNATE GHOST PIPEFISH ★ STEP-BY-STEP GUIDE
★ FRESHWATER PROFILE - SMALL AQUARIA ★ COMPANY PROFILE AND MUCH, MUCH MORE

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Contents

From the editor

Love is in the air

This month *Tropical Fish* has a marine special article from Dave Garratt, and he discusses compatible fish for your tank. Those who can live in harmony together, and keep the peace and love, and those who should never be in the same tank together - ever!

Well, this month also sees St Valentine bring the love bug into our hearts, as once again, we dash out to Clinton Cards to stock up on gifts and sloppy cards for our loved ones. But what is February 14th really all about, and what does it have to do with fish?

Valentine's day is actually a celebration of 'The good Saint Valentine' who was a priest in Rome in the days of Claudius II. He and Saint Marius aided the Christian martyrs and secretly married couples when Claudius the II had banned the ceremonies, believing it was taking men away from joining his military leagues. For this kind deed, Saint Valentine was apprehended and dragged before the Prefect of Rome, who condemned him to be beaten to death with clubs and to have his head cut off. He suffered martyrdom on the 14th day of February, about the year 270 and this is why we celebrate Valentine's Day.

So, when you are stocking up your new tank this February, or adding new species to your existing set-up, just stop and think about which fish you're mixing - is it going to end up as love at first sight, peace and harmony - or in a brutal battle and a struggle for survival?

Let's all stock sensibly - and feel the love!

See you next month



10

10 Freshwater Profile
Making the most of smaller aquaria



22

14 Show report
Tim Hayes reports on the Instant Ocean Seminar 2004



26

18 Cichlid Profile
Chris Ingham helps to make your fry fly!



32

36 Plant Special
Darren Slater checks out a big, bulbous plant



42

42 Step-by-step guide
Part seven of the series moves on to feeding your stock



60

50 Company Profile
A visit to Valley Aquatics

52 20 Questions
One of the best-known names in the industry!

64 Public Aquaria
Tropical Fish visit Ireland's National Aquarium

REGULARS

- 6 The Filter
- 20 The Salt Cellar
- 38 Fish Forum
- 40 Ask the Panel
- 48 Competition - Nishikoi
- 49 Plant of the Month
- 54 Club Scene
- 56 The Think Tank
- 74 Last word

THE SALT CELLAR

21 Marine creatures
When those deep, dark, creatures of the night come alive

26 Tropicals in the wild
Shaun and Beth discuss a ghost in the water

32 Marine Special
Dave Garratt tells us what not to mix!

THE THINK TANK

57 Filtration
Craig Baldwin begins a brand new series on filtration methods

60 Plants page
"Why won't you grow?" Darren Slater discusses chemical warfare in the tank

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The Filter

All the best news, reviews and information from the fish keeping world

REEF ONE 'SMART FILTER CARTRIDGES' SET TO REVOLUTIONISE FISH AID AND ENVIRONMENT



To help overcome two of the major problems encountered by fish keepers – aquarium algae and fish stress – Reef One has designed two revolutionary smart filter cartridges for their biOrb and biOrbE aquariums.

Both cartridges are pre-loaded with natural additives: the 'No Algae Cartridge' collects green algae and inhibits algae re-growth, whilst the 'First Aid Cartridge' provides the necessary relief from fish diseases such as whitespot and fin rot, as well as common fungal and bacterial infections.

Each colour-coded cartridge comes complete with full instructions and is intended to temporarily replace the regular filter in the aquarium system. Natural additives are slowly released over a number of days and once the problem has been overcome, the regular filter can be refitted and normal aquarium operation restored.

Extensive tests carried out using these revolutionary smart filter

cartridges have proved very successful, and Reef One believes that because they are so easy to use, biOrb and biOrbE owners will make them an essential part of their fishcare kit.

Reef One smart filter cartridges are expected to retail at £5.95 each.

"We are always looking at ways to make fish keeping easier for enthusiasts. With these smart filter cartridges we also feel that we are helping improve the quality of life and environment for fish", commented Reef One's Managing Director Paul Stevenson.

For more information please contact: Paul Stevenson, Reef One Ltd, F1 Abbey Farm Business Park, Horsham St Faith, Norwich, Norfolk NR10 3JU. Tel: +44 (0) 1603 710339. Fax: +44 (0) 1603 710029. Email: info@reef-one.com Web: www.reef-one.com or Mike Forrest, 8 Sunningdale, Norwich NR4 6AQ. Tel/Fax: +44 (0) 1603 473739 Email: mike4est@sizze.net

ATLANTIS AQUATICS COMPETITION WINNER

Tropical Fish would like to say congratulations to Mr Hemant Mistry from Leicester who won the December Atlantis Aquatics competition. The answer to the question: The Pro Metal Deluxe will purify up to how many gallons of water between cartridge changes? Was, 2,000 gallons.

So, congratulations to Mr. Mistry, we hope you enjoy your deluxe purifier, and thank you to Atlantis Aquatics for donating the prize.

PRINT ERROR

I would like to point out an error from our January Issue on page 15 (Cichlid Profile). In the 'Did you know' box the text reads: Higher radox levels will reduce spawning and kill off bad bacteria, when in fact it should have read: 'Higher radox levels will induce spawning and kill off bad bacteria.'

Ed.

ACI - ENERGY EFFICIENT AIR BLOWERS

Air Blowers ideal for multi-tank aeration, both for the retail and the wholesale aquatics markets, are available from Air Control Industries (ACI) Chand.

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The blowers are ACI's Multi-Stage units. They have low power consumption (120W - little more than a light bulb), low noise and low initial cost.

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Models available are: Series 7 for up to 100 12/15 inch deep tanks, series 9 for up to 150 18 inch tanks, and series 11 for up to 150 24 inch tanks.

For information contact Matthew Forknall on Tel: 01460 67171/Fax: 01460 61700 or email matthewforknall@air-con.co.uk



PETE PIRANHA WAS HAVING A REST

Dear readers,

You may have noticed that it was a little hard to find me in the December issue. Well, that was because after a very busy Christmas, I needed a well-deserved rest. But you'll be pleased to know that I came back last month (somewhere), so if you found me (or find me this month), don't forget to send in your entries to be in with a chance of winning a year's subscription.

Love Pete

NEW BIG SILVER BIORB BRINGS FISH TANKS INTO THE 21ST CENTURY



Traditional household fish-tanks have rarely changed in look and design over the last few years. With this in mind, leading petcare retailer, Pets at Home has launched its new stylish 'Silver Big Biorb' to give this popular accessory a 21st century look for the modern home.

Tailor-made for contemporary living with its compact, spherical glass design, the Silver Big Biorb features a self-cleaning facility to make life even easier for cold water and tropical fish owners with demanding modern lifestyles.

The innovative Silver Big Biorb is part of Pets at Home's new aquatic range, which also features precision made larger tanks, such as the Juwel Vision 180 which comes in beech.

Linda Whiting, events and PR manager for Pets at Home, commented: "Pet accessories are becoming more of a lifestyle choice, with fish tanks such as the Silver Big Biorb and Juwel Vision 180 providing a stylish addition to any modern home. Our new aquatic range fuses contemporary designs with practical features that offer ease and convenience.

"With goldfish lasting up to 10 years and tanks spanning over a metre in length, it's important for pet owners to shop around for a fish tank in order to achieve the right look and to help fish feel at home."

Pets at Home also takes out the hassle for beginners with its new tropical and cold water starter kits containing a lighting and filter system.

To find your nearest Pets at Home store and receive the latest information on the new aquatic range, log on to www.petsathome.co.uk. Silver Big Biorb: £139 for cold water fish and £159 for tropical fish. The Juwel Vision 180: £339. The Tropical Starter Kit: £59.95 and the cold water starter kit costs £49.95.

THINK FISH A Fishkeeping Encyclopedia A-Z

Thinkfish.co.uk is a new fish keeping resource website created by fish keeping expert Peter Hiscock. So, to help you see just how useful and efficient the site is, each month we'll be printing, from A-Z, a taster of the fish keeping encyclopedia from the website, to help you learn and understand more about your favourite hobby. Naturally we begin this month with 'A'...

Activated carbon

Activated carbon is a chemical filter media, created by heating substances such as bone or coconut to very high temperatures (the activation process). The resulting media is very porous and 'traps' molecules as they pass through the filter. Activated carbon can remove a number of harmful substances and water colourants, although it must be replaced every few months to prevent the possibility of those substances being 'leached' back into the water.

Algae

Algae are a primitive form of plant-life that will grow wherever there is water, light, and a nutrient source. It is impossible to prevent the introduction of algal cells into the aquarium, as they will arrive in microscopic form with water, either from the tap, or from the introduction of fish, and can even enter the water airborne from the atmosphere.

High phosphates, nitrates, and waste build up are the most likely causes of problem algae in aquariums. Good water quality monitoring, and a team of algae eating fish and inverts will solve most algal problems.

Ammonia

Ammonia (NH₃) is produced when various organisms break down protein in order to obtain energy. Protein can come from any organic source, eg: food, fish waste or plant debris. In an aquarium, the main source of protein, and thus ammonia, is from fish food, whether it is eaten or not. At sufficiently high levels, ammonia is highly toxic to fish and other aquatic life, although its toxicity depends on a number of water conditions.

Ammonia can be found in two forms in the aquarium; free ammonia (NH₃) and ammonium ions (NH₄⁺), of these two forms, free ammonia is by far the most toxic.

Anaerobic bacteria

Bacteria that live in oxygen-lacking, or oxygen-deficient areas are known as anaerobic bacteria. All bacteria need oxygen to survive, so anaerobic bacteria must obtain their oxygen by breaking down various oxygen-containing molecules. One relevant situation where this occurs is in anaerobic bacteria which break down nitrates (NO₃) to produce oxygen (O₂) by the following process: 2NO₃ = 2N + 6O₂. By reducing the oxygen level in specially designed filters and deep substrate beds, anaerobic bacteria are encouraged to grow, in order to remove nitrates from the water.

A is also for Acclimation, Acidity, Alkalinity, Actinic, Aeration, Air Pump, Allelopathy, Anaerobic Substrate, Antibiotic, Aquascaping, Artemia, Asexual Reproduction, and Assimilation. View the rest of the encyclopedia at www.thinkfish.co.uk/encyclopedia

www.thinkfish.co.uk

SEND US YOUR NEWS!

The Filter will have all the best news, reviews and information from the tropical fish world. If you have something you want to share with our readers, then don't hesitate to get in touch.

Whether it's news on a product from your company or an event happening in your area, we want to hear from you. Send in the details to: **The Filter, Tropical Fish,**

Freestyle Publications, Alexander House, Ling Road, Tower Park, Poole, Dorset, BH12 4NZ, e-mail maria@freepubs.co.uk or fax: 01202 733969.

ROYAL DISCUS COMPETITION TOKEN 2



Last month *Tropical Fish* printed the first token for the competition in conjunction with our magazine and www.royaldiscus.co.uk.

The competition is for the person who 'posts the most' on the Royal Discus website during 1st January 2005 and 30th June 2005.

The prize is a brand new, four by two by two foot tank, on a solid wood mahogany cabinet, with Arcadia Lumina lighting and an Eheim Filter, plus 10% off your first fish order.

The second prize is a 12 month subscription to a fish magazine of your choice (that has participated in this competition), and third place gets 300gr of TetraPrima.

All people taking part in the competition will have the counters zeroed on the 1st January 2005, and there will be details of bonuses for posting the most interesting article.

All rules are online.

From the editor

Please cut out and keep token 'two' somewhere safe, in order to bump up your posts at the end of June. To make sure you get your copy of *Tropical Fish* every month why not take advantage of our subscription offer with NT Labs, then you'll ensure you never miss a copy, or a token! If you do miss a token you can order any back issues on 01202 713630.

Good luck!

ROYAL DISCUS COMPETITION
TOKEN 2
FEBRUARY 2005

YOU MUST SUBMIT 6 DIFFERENT NUMBERED TOKENS.
COPIES WILL NOT BE ACCEPTED.

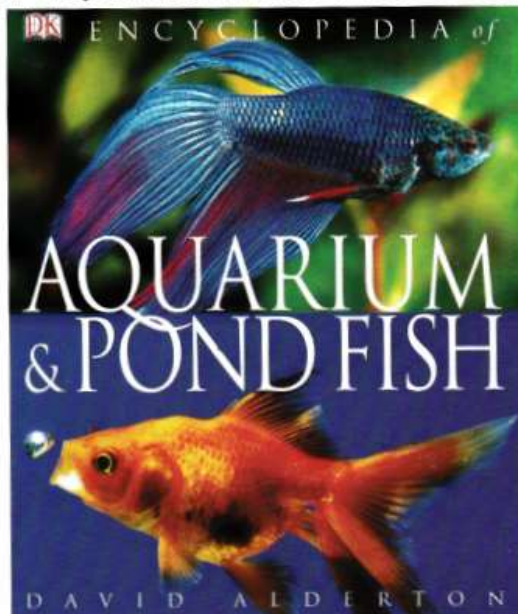
ENCYCLOPEDIA OF AQUARIUM AND POND FISH

The definitive guide to choosing and keeping freshwater marine fish, for aquaria and ponds.

The Encyclopaedia of Aquarium and Pond Fish is the first book on the market to provide care and identification information for all types of fish, in every fish keeping environment from fresh to salt water, indoors to out. There are about 30 million kept fish in the UK alone, and this lavishly illustrated work provides a benchmark reference for all fish keeping enthusiasts, whether they are new to the hobby or old hands.

Step-by-step pictures of over 800 fish show you not only what they look like, but provide all the key information you'll need, such as how big they grow, what food they eat, the temperature they prefer, healthcare and what other fish are suitable to be kept with them. There are also detailed instructions on how to create indoor and outdoor ponds and tanks, as well as illustrations of other marine life such as corals and plants.

David Alderton is an international best-selling authority on pets and



natural history subjects, with book sales in excess of 5,000,000. His titles are currently available in 25

languages. He is a consultant for the American Pet Industry Joint Advisory Council and lives in Brighton.

THE BEST JUST GOT BETTER!

2004 was a very good year for growth and expansion for Plymouth Discus and its team, and 2005 is showing no signs of slowing down either. The proprietor of the business, Chris Ingham said: "It has been a very busy year, with lots going on all the way through, but at the moment we are waiting for more planning permission for a fourth extension of the main discus show room." Assistant Rita Hayes at the Plymouth store has offered to run a second shop an hour away in Exeter, leaving Chris and his partner Christine Orchard, to run the main store in Plymouth: "If we don't get this we will have to relocate in Plymouth as well as Exeter, as it would be a shame to slow down a healthy growing business. This has come about because we are in talks at the moment, and by the time this goes to press we will be stocking Kevin Chen Huan-Kai's fish, from Fish King Discus in Taiwan, on top of our usual show fish, 'bread and butter' discus and also wild discus. His discus won supreme championship with his Blue Diamond discus. In fact he also took second and third place in that class and was also placed in another class."

Telephone 01752 784671 for more information

ALLCLEAR HAVE MOVED!

Did you have any problems getting hold of AllClear Water Purifiers between the 1st and 12th of November? Ann and Richard Telford hope not, but as we all understand, moving and the installation of new phone lines is not always an easy time.

Yes, AllClear have moved. Their new office and workshop are now fully open, up and running and ready for the 2005 season.

"We're so pleased that moving time did not happen in the middle of the show season, we were holding our breaths over that possibility," said Richard.

Why did they move? A lack of space and their original town, Brentwood, getting more and more clogged with traffic.

Have they achieved their aim? Yes, far more space and only the rare car, so it is lovely and peaceful with easy travel.

Any problems? "Squirrels digging up the lawns looking for their nut hoards," said Ann. "But even watching the squirrels is fun. We are thoroughly enjoying our new surroundings and certainly don't want to go back!"

Next task? Rapidly erecting a temporary koi pond and filter system in

the garage. Then planning and building their koi's permanent pond.

Any other tasks? Building an assault course for squirrels to provide them with a nut supply and keep them off the lawns - unless there are any better suggestions! AllClear's new contact details can be found in their adverts and on their website www.allclearwaterpurifiers.com. As a reminder contact them at: AllClear Water Purifiers, Juglans, Church Green, Watisfield, Diss IP22 1NS. Telephone: 01359 253 679. Fax: 01359 253 680. BT is also providing an intercept service on AllClear's old phone line so that anyone who rings that by mistake will be given the new AllClear number.

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Good fish come in small tanks!

Size isn't important (at least that's what they tell me), but when it comes to aquariums, the size of your tank places certain restrictions on what you can, and cannot do with regards to maintenance and species care

At this time of year there are many new aquariums being set up for the first time, and most of these will be towards the smaller size of the typical aquarium range. In this month's article I will outline the problems and the possibilities of smaller aquariums.

What makes a small aquarium?

I would consider a small aquarium to be between 30cm (12 inches) and 60cm (24 inches) in length. Any smaller than this range, and it is too small to keep any fish in, regardless of their size. Small aquariums need exactly the same equipment as larger tanks, so a heater (assuming tropical fish are kept) and filter are essential. A good light is also required if you wish to grow plants, or see your fish at their best.

The stability factor

In comparison to a fish's natural environment, a small aquarium really is too small, but providing the right fish are chosen however, the space factor is not a problem. If the environment is sound, and there is enough space for the fish to act in a natural manner, most small fish will thrive in small tanks. Some fish, such as the Siamese fighting fish, seem to even prefer smaller aquariums, although this is more likely to be because of their dislike of open spaces or busy communities.

The solution to pollution is dilution

The major factor to consider in regards to the well being of the fish in small tanks, is the smaller volume of water, and the effect this has on the environment. In a large volume of water, changes in chemistry caused by the addition of



Photos by the author unless otherwise stated

A simple planting strategy is best for small tanks. Just a few species can have a dramatic effect.



The shape and form of smaller fish such as this Cherry barb, is often appreciated better in a smaller space - Photo by Iggy Tavares.



A Cherry barb and a corydora living happily together in a small tank - photo by Iggy Tavares



More and more shrimps are becoming available in the shops. This shrimp uses 'fan' like appendages to catch particles of food

keepers tell me how they routinely clean the aquarium every month or so, which usually involves almost an entire water change. The only time in which you should ever change more than half the water in an aquarium, is in response to an emergency situation.

Why water change?

Getting correct advice on water changes is difficult and you will find many different recommendations depending on where you look, what you read and whom you ask. The reason for this common conflict, is that few people understand exactly what water changes are for, but it is quite simply two main things; to reduce nitrate levels, and to replace lost minerals and buffers.

As tapwater nowadays contains all kinds of nasties, it is often best to do the smallest water change possible, within a limit. Set a base limit of 20% per month (preferably 10% every couple of weeks) and no

LOOKING AFTER A SMALL AQUARIUM IS FAIRLY EASY AND THE BASIC PRINCIPLES ARE THE SAME AS FOR A LARGER AQUARIUM, BUT LESS!

a pollutant are much diluted in comparison to the same level of pollutant being added to a smaller volume. To put this another way, the introduction of one gram of a substance to a 100l volume of water gives a concentration of 1mg/l (one milligram per litre), but the introduction of the same amount to only 10l of water gives us a concentration of 10mg/l (10 milligrams per litre). What this all means, is that any detrimental changes caused by common factors such as overfeeding, overstocking, bad maintenance and so on, are greatly increased in smaller aquariums. The only way to counter this effect, and keep top conditions, is to carry out a regime of regular water testing, proper maintenance, and most importantly, correct feeding levels.

Maintaining a small aquarium
Looking after a small aquarium is fairly easy and the basic principles are the same as for a larger aquarium, but less! Water changes are the key factor to consider; little and often is the rule here. I have heard far too many fish

less, then alter the amount based on your nitrate and hardness levels. If nitrates rise, increase the frequency of water changes or add a nitrate remover. If hardness drops, increase the frequency of water changes or add a mineral additive/buffer.

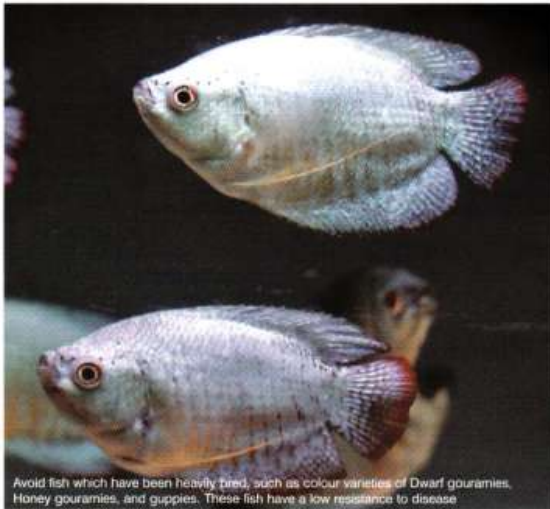
Remember, that with small aquariums, anything you do which affects the water quality or the overall stability of the aquarium, will have a larger effect than in a bigger tank. Maintenance should therefore be a case of little and often, which is also the key rule for feeding.

Feeding

The single most important factor for the well-being of most aquariums, but especially smaller

DID YOU KNOW?
Fish which inhabit pools, swamps and ditches are better suited to small aquaria - these fish are naturally used to fluctuating environments

Freshwater profile



Avoid fish which have been heavily bred, such as colour varieties of Dwarf gouramies, Honey gouramies, and guppies. These fish have a low resistance to disease

CHOOSING THE CORRECT DÉCOR CAN HAVE QUITE AN EFFECT ON THE TANK'S APPEARANCE

aquariums, is the quality and level of feeding. The food you place in the aquarium is the main, and in some cases the only, source of waste produced in the aquarium. The less you feed, the less waste is produced, and the better the environment will be.

Of course, your fish will need feeding correctly, so a balance must be made between providing them with all the food they require, without overfeeding. A good rule to follow to achieve this, is to feed your fish as much as they will eat in only a minute, without any food sinking to the bottom of the aquarium or being left over. Standard flake foods are a good choice for the fishes' main diet, most flake foods produce less waste products than some other food types, so it is wise to stick to this food type during the first couple of months. Once the tank is a few months old or when you start adding fish such as bottom dwelling scavengers or algae eaters, you will need to start feeding some

AN EXCELLENT ADDITION

Japonica shrimps (*Caridina japonica*) are excellent additions to small aquaria, and a group of these shrimps is also more likely to be seen in a small tank. Some barbs will also inhabit the lower regions, swimming amongst or just above the plants and décor.

different types of food, and a varied diet will help your fishes' overall health over a long period

Plants and décor

Smaller aquariums usually look their best when they are densely planted, and the fish will appreciate this too. Providing you have a good nutrient rich substrate (try adding some laterite based substrates) and reasonable lighting, most hardy plants will do well in smaller aquariums. Bushy plants like Cryptocorynes, and smaller foreground plants are the best choices. Choosing the correct décor can have quite an effect on the tank's appearance.

For some reason it seems tempting for many hobbyists to fill the aquarium with all manner of objects, but the best bet is to stick to a theme and choose a central object surrounded by plants, or a few complementary pieces. Small aquariums really shine when they become a small slice of nature, providing a 'window' into another world, so natural styles are always a good choice.

Fish

Arguably the most important element of the aquarium is the fish, and choosing the right fish can be tricky, given the wide range available. For small aquariums it is not a simple matter of choosing

small fish, although obviously this is a factor. It is important to consider that the fish you choose will have to live together in a restricted space, so even a slight hint of territorial behaviour or a boisterous nature could become a big problem.


Common mistakes include fish like male swordtails, Dwarf gouramies and Dwarf cichlids, which may all turn into tank bullies. Fish that are constantly active, like Rosy barbs, or danios will often do well in smaller tanks, but may annoy other tank mates with their constant movements.

For the lower regions of the aquarium, and to make a good cleaning crew, a mixture of small scavengers and algae eaters can be used. Small groups of Corydoras make ideal scavengers whilst Otocinclus and small *Peckoltia* sp. are good, small algae eaters.

Good choices for smaller tanks include the Cherry barb (*Puntius titteya*), Checkered barb (*Puntius oligolepis*), and Fiveband barb (*Puntius pentazona*).

For the midwater regions, shoals of small tetras are always a good choice, but avoid nippy tetras such as Red-Eyes or Serpaes. Neon tetras (*Paracheirodon innesi*), Glowlights (*Hemigrammus erythrozonus*) and black or red Phantom tetras (*Hyphessobrycon* sp.) should do well, but neon's are best added once the tank is well matured.

For the surface levels, although they will swim elsewhere, platies (*Xiphophorus maculatus*) and mollies (*Poecilia* sp.) are always popular. Guppies are also popular fish, but I would not recommend them for small aquariums due to their weak nature caused by intensive breeding.

Other good fish for small tanks include the Honey gourami (*Trichogaster chuna*), Cootie loach (*Pangio kuhlii*) and Harlequin rasbora (*Trigonostigma heteromorpha*). A single male Siamese Fighting fish also makes an excellent addition, and will quickly become the most noticed fish in the tank. 



careful use of décor can make a tank look bigger than it really is - this tank is just under two foot (60cm)

MAINTENANCE SHOULD THEREFORE, BE A CASE OF LITTLE AND OFTEN, WHICH IS ALSO THE KEY RULE FOR FEEDING

The popular Siamese fighter is an ideal addition to small, well planted aquariums



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An event for everyone

Currently the Instant Ocean seminar is the only event of its kind for the marine hobby in the UK. It's an event that only happens every two years, with this year's being the seventh, and I was privileged to become involved

A couple of months back I received a phonecall from Des Ong of Underworld, the organiser of the seminar, asking, since one of the original speakers had dropped out due to prior commitments, if I could help out by finding a replacement speaker. As Midland Reefs represents a number of US aquarium writers, I was glad to help out, and I managed to secure the services of Steve Tyree.

A thought for the future

The Sunday morning of the event started off far too early for my liking, with helping to set up the bookstall before everyone arrived. We had a reasonable turnout, but we'd definitely like to see more people there in the future. (By the way, thanks to the *Tropical Fish* readers who came up to me to say hello, it was great to meet you all.)

The first talk

The first speaker of the day was Scott Michael. Scott is a renowned writer and photographer specialising in fishes; his 'Reef Fishes' series of books should, in my opinion, be adopted as a standard for the hobby. His talk was entitled 'My Favourite Fishes', though I think this title might be a little misleading.

The main gist of Scott's talk was that most of us would be far better off keeping species more appropriate to the size of our tanks, bearing in mind the ranges of some of these fish in the wild. (Personally this was very gratifying, as this is something that I've always strongly

SCOTT'S FAVORITES

Scott did include his own personal favourite fish in his talk - the frogfish. These are fish that he admires for their specialised lifestyle and their very diverse colouration.

All photos by the author



Daniela, Scott, 'Charlie' and Steve



Scott was the first speaker of the day

DANIELA'S AN AMATEUR AQUARIST, BUT WHAT SHE DOES SHOULD BE A LESSON TO US ALL

believed in.) Also, pointing out a number of species of fish that are commonly kept, even though they're unsuitable for captivity for a number of different reasons.

The slide show

Scott had a marvellous collection of slides to show the audience, this is a man who still prefers the quality of photographic film over the convenience of digital. Due to a slight problem of understanding, when it came to the slide projector, Scott ended up being aided by Steve Tyree who had to insert the slides individually. (The look on Scott's face when Steve was juggling his slides, especially at one point when Steve was holding the mount of a slide between his teeth, was priceless - a real Kodak moment!)

Many of the slides were concentrating on the more recently discovered, smaller species of fish that are starting to come into the hobby, species that would be particularly good for the sizes of tank most usually kept. This is something, that with Scott's help, I intend to cover more fully in the future.

Learning from amateurs

Daniela Stettler followed on after a short break and gave a really enjoyable talk. Although the audience had to work a little at times to fully understand Daniela's English, it was all very rewarding. Unlike the rest of the speakers, Daniela's an amateur aquarist, but what she does should be a lesson to us all. By devoting herself to one particular aspect of reef keeping, she's managed to build up a stunning aquarium and shown what can be done when you really concentrate your efforts on one or two individual species.

She specialises in the corals of

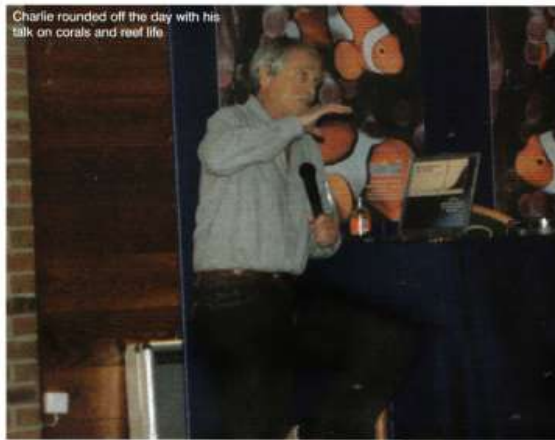
the genus *Tubastraea*, these are the species commonly referred to as Sun corals. *Tubastraea* species are non-photosynthetic corals that in captivity are almost totally reliant on being fed by their owner. I don't believe them to be a particularly difficult coral to maintain, as long as you're prepared to put in the time and dedication to feeding that's required, but Daniela has taken it to another level entirely! She keeps three different species of *Tubastraea* and has great success when it comes to breeding two of them. In my opinion this is what our hobby should be about, and Daniela is a great example for us to follow.

Steve's speech

Following lunch, Steve Tyree took to the podium to expand on his theories of the Zonal Concept as a form of natural captive reef filtration. Steve's talk started slow with explanations about the concept of the zonal system and the terminology involved, and then went on to describe the conditions that exist in the different zones.

After he'd gone through the groundwork, Steve moved on to the more practical aspects of

Charlie rounded off the day with his talk on corals and reef life



implementing his system. Since I introduced Steve's ideas to the UK by bringing in his books last year, he's been fine tuning the system and simplifying it, making it easier to integrate in to the home aquarium. His talk was well illustrated with photos of the various fascinating sponges and tunicates that are at the heart of this method of filtration. For those of you unable to attend the seminar,

Steve has produced a version of his talk on both DVD and PC CD media.

Last but not least...

The last speaker of the day was Dr. J.E.N. Veron, known to most of us in the hobby as 'Charlie'. Dr Veron is a very accomplished, relaxed speaker who, while primarily an academic, is a very good friend of the hobby. Dr. Veron's one of the leading authorities in the world on

DR VERON IS A VERY ACCOMPLISHED, RELAXED SPEAKER WHO, WHILE PRIMARILY AN ACADEMIC, IS A VERY GOOD FRIEND OF THE HOBBY

Dr. Veron - otherwise known as 'Charlie'



ONE SIZE FITS ALL

This is only a brief resume of the day's activities: something to give you a taster of what goes on at this sort of event, and perhaps encourage you to attend future seminars. So, don't think that events like this are just for experienced aquarists; anyone can benefit from coming, no matter how new to the hobby you might be.

Show Report



Steve Tyree expands his theories on Zonal Concepts

is that this is probably one of the best public aquaria in the world from a live coral point of view. As you may have realised from visiting public aquaria in the UK, good live coral displays are somewhat lacking, usually at best, on par with some of the larger hobbyist tanks; Monaco is a fine example of what is possible.

THANK YOU TO....

I'd like to thank Des Ong, Dave Keeley, and all at Underworld for organising this very important event; all the speakers who gave up their time so the seminar could take place, the members of WYMAG for all their hard work, and lastly, all of the people who attended the event.

If any of you have any ideas of whom you'd like to see speak at future seminars, or of ways you think that the seminar could be improved, please don't hesitate to get in touch. [EML](#)

TO FINISH OFF THE DAY'S PROCEEDINGS THE SPEAKERS TOOK TO THE PODIUM TOGETHER FOR A QUESTION AND ANSWER SESSION

tropical reef-building stony corals, and has been responsible for naming the majority of the species of *Acropora*. His talk encompassed his experiences of cataloguing the species of coral on the Great Barrier Reef early in his career, through to his rewriting of the taxonomy of corals, correcting the misconceptions of a generation or so of scientists who'd never seen a live coral. Further subjects covered included the whys and wherefores of coral distribution, and finally he ended on the rather sombre subject of the future of the reefs, in light of the effects of global warming.

Q&A round-up

To finish off the day's proceedings the speakers took to the podium together for a question and answer session. The main topic covered here was the subject of quarantine, firstly in relationship to fish, then broadened out to cover corals. Everyone was in agreement that the quarantine of animals prior to introduction into your reef, especially of fish, was of the utmost importance. Although a number of people might argue against this, pointing out that the stress involved can be detrimental, the panel of speakers reminded us that this is

standard procedure for public aquaria, and that the consequences of introducing a diseased fish into your reef can be catastrophic, possibly leading to a complete fish wipe-out.

The magical museum

On the Monday following the seminar I had the opportunity to take Steve Tyree to Monaco to visit the Oceanographic Museum. It was an interesting day's outing. On our arrival Steve presented a set of his books and CDs to the Oceanographic Institute (based in the same magnificent building, and mostly financed by the entrance fees to the museum). We arranged to return to the Institute a couple of hours later, to talk with one of the curators, and proceeded into the museum desperate to get lunch. The hunger magically melted away as the largest reef tank I've ever seen immediately confronted us! Needless to say it was at least another two hours before we dragged ourselves away to have a, by now, late lunch.

Going around the aquarium with Steve was very educational and we're planning on doing an in depth article together, looking more closely at some of the animals that are on display there. Our consensus



Daniela smiles for the camera



Daniela is an amateur, but gave some invaluable information

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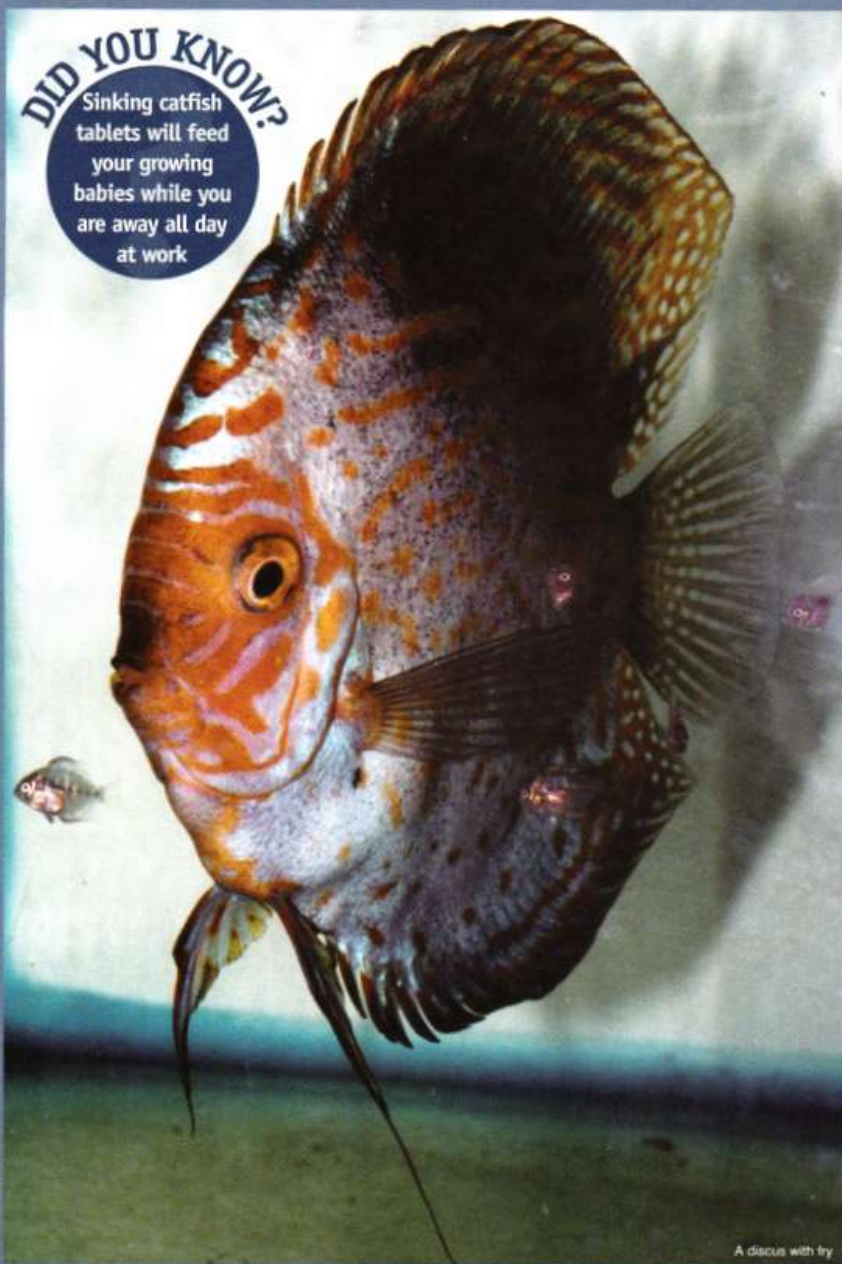


MAKING YOUR FRY FLY

Last month we looked at breeding on a large scale and how to achieve it successfully. This month Chris Ingham shares more secrets, and explains how to grow young discus fry ready to sell on

DID YOU KNOW?

Sinking catfish tablets will feed your growing babies while you are away all day at work



Photos by Jody Tanen

A discus with fry

There are many ways, right and wrong, to breed and raise discus. Many new breeders in the UK are now breeding discus similar to our commercial cousins in the Far East, China and Singapore, and they will look at you blankly if you start talking about biological filtration systems.

UK breeding

So why is this? What are we doing differently in this country? Well, first of all - heat! The discus rearing tanks in the Far East have approximately 90% of the water, changed every day; and they don't have to worry about the cost of heating the water, as tropical temperatures are perfect. They use bare bottom tanks with no filtration, only a spawning media or cone, and a large air stone for aeration. This is the top key to breeding discus on a large scale, with no heating bills to pay and the cost kept minimal.

Competitive costs

This is a fact that we find hard to compete with in the UK. With the cost of living being far less than ours, and even with shipping and tax added on, it is cost effective for the retailer to import, rather than breed his own. Also, the time and space needed to grow on the youngsters to

WATER CHANGES

As explained last month, correct insulation will help to keep your heating bills down, and this helped me because I was changing my water all the time, the same way they do in the Far East. They feed the discus as much as they can all day, and then change the water. So the secret is, feed and water change, feed and water change. Doing this will help your young discus grow very rapidly.

BUYING A BREEDING PAIR

The best place to obtain a proven breeding pair is from a discus specialist, or any good tropical fish retailer that knows his discus. The Internet is another good place to find proven pairs, and much help from breeders and members will help newcomers to the hobby. The UK Discus Association (UKDA) has such a website, where breeders, retailers and hobbyists share views, and help and advise on the forum. If you breed brother to sister, expect to have a higher cull rate to unrelated pairs, because you will find that fins or misshapen tails and bodies will be more evident when breeding this way.

a sellable size is not possible to many shop keepers and outlets.

But, many will buy English bred discus from hobbyists to sell on, and this is how it all started for me. However, with electricity, equipment and foods all pushing up the cost, how can this be made into a profitable venture?

Self-financing

I started off with one pair of discus. They bred and I grew on the young, with everything going to plan the first time. This gave me the confidence to use the money I made on the first batch, to buy a second pair of a different strain, giving me a choice of stock to offer the shops.

WITH ELECTRICITY, EQUIPMENT AND FOODS ALL PUSHING UP THE COST, HOW CAN THIS BE MADE INTO A PROFITABLE VENTURE?

With two pairs on the go things really speeded up, and before I knew it, I had paid for a complete fish house, just by breeding and selling on my own baby discus. Swapping them or trading them in to the local shops also helped. They gave me a good deal on part exchange and without having to spend out, this paid for more equipment and fish needed to grow

the breeding project.

Sterilisation

when breeding on a large scale, the importance of sterilisation in the tanks, is essential, as diseases will hamper any breeding project and can cause major upheavals. Leaving nothing to chance, I use a UV steriliser and an ozone unit, and the benefit of the latter is that ozone raises the radox level, and encourages spawning, also killing off any parasites, viruses and harmful bacteria that the UV may miss.

O3

Ozone is an unstable form of oxygen known as O3 (zero three) and can be harmful to humans if not used properly. Ozone can be used in many ways, I prefer to pump it through a two inch air stone and blast it through the final chamber in my sump filter. Any parasites or harmful bacteria will be killed off as they pass through the ozone bubbles, before returning back to the tanks, and anything coming into contact with these deadly bubbles is killed - the only drawback being, that any air pumped through an ozone unit must not come in to contact with fish.

The O3 can burn off the scales, so if you do use ozone directly into the tank make sure it passes through an air uplift or similar, and the

outlet is above water level. This way the O3 is exposed to the air above the water line and cannot harm the fish, and again any parasites, viruses and harmful bacteria are killed off, as the water is lifted into the uplift before the filtered water drops back into the tank.

What a nice pair!

To obtain a good profit breeding pair, you will need to either buy at least six discus from different places, and let them pair off themselves, or buy a proven breeding pair.

I favour buying young discus from many different outlets and check they are from different sources. Place the group in a large tank and grow them on until they have paired off themselves. A pair will take over a spawning site, and



A discus pair covering their eggs.

TO OBTAIN A GOOD, PROFITABLE BREEDING PAIR, YOU WILL NEED TO EITHER BUY AT LEAST SIX DISCUS FROM DIFFERENT PLACES, AND LET THEM PAIR OFF THEMSELVES, OR BUY A PROVEN BREEDING PAIR



A proven discus pair ready for breeding

no other discus will be able to get anywhere near the cone or spawning area. After some tail slapping and a few practice runs, as if they are laying eggs up the cone, you know a pair are forming.

The best way to select your breeding stock is to visit as many outlets as possible and see who has pairs, ideally with young on them. This will give you a chance to see how good the parents are with the youngsters. This way, you are in with a good chance of selecting a good pair that will work well for

you. The last thing you want is a pair that will breed and then eat all the eggs. You then have the choice of splitting the pair or covering up the eggs with a guard until they are free swimming. The less complex it is, the easier it is going to be for you to produce. **FIN**

NEXT MONTH

Don't miss the final part of this series, when we look at the busy hobbyists who work all day and cannot be there to work the fish room. Don't miss it!

DID YOU KNOW?
Remember -
for every pair
of discus, you will
need at least two
to four foot in
growing on tanks



THE SALT CELLAR

Your monthly guide to marine fishkeeping

21—MARINE CREATURES

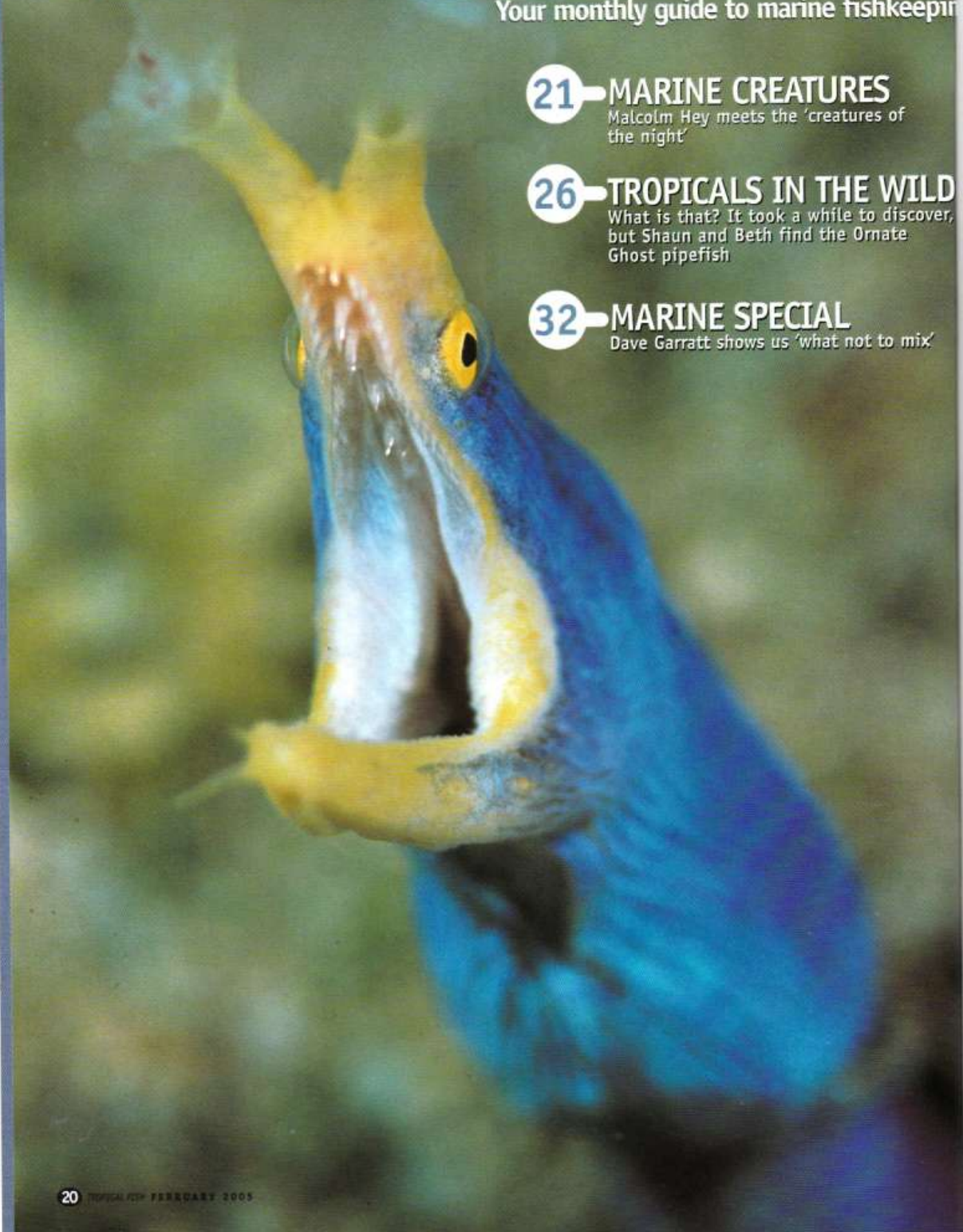
Malcolm Hey meets the 'creatures of the night'

26—TROPICALS IN THE WILD

What is that? It took a while to discover, but Shaun and Beth find the Ornate Ghost pipefish

32—MARINE SPECIAL

Dave Garratt shows us 'what not to mix'



CREATURES OF THE NIGHT

Malcolm Hey discovers a whole myriad of sea life that comes alive after 'lights out'



Bigfin reef squid (*Sepioteuthis lessoniana*) hover in the open water

All photos by the author

During these long, dark, winter nights I often sit at home over a blazing log fire and let my

thoughts turn to tropical sunsets over tropical seas. The setting sun is a signal to reef life that it is time to change shifts. There is an eerie quietness in the half-light below the water's surface as the frenzied activity of the day slows

down. The day-active fish move in close to the corals seeking shelter

for the night and the creatures of the night start to stir.

Lighting up time

As dusk falls, manderinfish (*Synchiropus splendidus*) slowly emerge from reef rubble and broken

coral in which they have been hiding all day. Generally, first to be

seen is the male, displaying its iridescent livery to full effect in an attempt to attract a female, the smaller of the sexes. Soon, scores may be promenading in and out of the rubble whilst courting takes place. But, as soon as the light has

completely gone, they return to their rubble hideaway.

Night shift

With the sun well down below the horizon, invertebrates crawl out of their hiding places and hunt their prey. Many species of Spider crabs forage amongst the sea fans and soft coral, taking advantage of the darkness when there is less risk of them being seen and attacked. Lobsters and the flamboyant Saron shrimp, hidden away in the crevices ▶

WITH THE SUN WELL DOWN BELOW THE HORIZON, INVERTEBRATES CRAWL OUT OF THEIR HIDING PLACES AND HUNT THEIR PREY



Tubastraea coral polyps embellish the reef walls

DID YOU KNOW?
Fish have no eyelids, so sleep with their eyes open

polyps of some corals are extended during the day, many feed only after dark, the colourful *Dendronephthya* soft corals blossoming to vividness, not so apparent in daylight.

Carpeted with gold

Reef walls and overhangs, that seem relatively bare during the day, are often carpeted with a rich golden yellow covering of *Tubastraea* coral polyps, their tentacles opening out to filter tiny organisms from the water. Frustratingly, at the slightest hint of light, they instantly retract into their tube-like structures. At the top of the reef, basket stars that are curled up during the day, unfurl their long, branched tentacles to form a mesh that filters food from the current; but are similarly sensitive to light and close up as soon as the beam from my powerful lamp illuminates them.

Nightlife

Feather stars, commonly seen actively feeding during the day in the seas of southeast Asia, gather in abundance and take on even more spectacular colourings. And in the Red Sea and the Caribbean, where they reach out of crevices during the day, at night they will come out into the open and perch on sea fans and coral heads, opening out their colourful arms to filter feed. Brittle stars emerge to feed at night often being seen amongst the branches of sea fans and soft coral.

Early to bed

Most reef fish are diurnal (day-active) and hide themselves away during the night. Wrasse and small parrotfish are amongst the first to call it bedtime, then butterflyfish and small damselfish, and finally large parrotfish and surgeonfish. Most hide themselves away well

MOST REEF FISH ARE DIURNAL (DAY-ACTIVE) AND HIDE THEMSELVES AWAY DURING THE NIGHT



A Slipper lobster (*Scyllarus trananoptera*) scrambles over the reef

of reefs and walls during the day, might be spotted scrambling over the face of the reef in search of food. Hermit crabs scuttle about and in the beam of my lamp, I notice a piece of the reef moving. On closer examination it turns out to be a Decorator crab under the cover of coral - sponge and hydroids attached to its body.

Night-time feeding for suspension filter-feeders such as feather stars and corals, is more productive than during daytime, as plankton from the depths rises during the night supplying the upper levels around the reefs with a rich supply of nutrients. Extended coral polyps in turn, give more cover for the tiny crustaceans that forage amongst the branches of sea fans and soft corals. Although the



Parrotfish (*Sparis* sp.) visibly shelter in the reef and many secrete a mucus cocoon

OCTOPUS AND HYPNOTISED SQUID

Small octopus can sometimes be found at night hunting over debris, rocks and reefs, seeking their prey of crustaceans and molluscs. They are fascinating to observe as they move swiftly over the reef and squeeze through impossible spaces. Squid, on the other hand, can be observed in the open water just below the surface, and are seemingly hypnotised by a lamp beam, just as rabbits are by car headlights.

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Ooh la la - A Spanish dancer nudibranch (*Hexabranchius sanguineus*) puts on a dancing display

DID YOU KNOW?
Water, at depth, filters out colours so a lamp is needed to reintroduce colours

into the coral reef, but some doze motionless on the sea bed. Most species of parrotfish leave themselves visible as they sleep in the shelter of corals, some secreting a transparent mucus cocoon as a mask for their scent. Puffers might be seen dozing amongst sponges.

It is not just on the coral reefs where there is an active nightlife. The sandy and muck sea-beds are more alive than during the daytime. Stargazers (*Uranoscopidae* sp.) with only their tooth-studded jaws and large penetrating eyes visible are best spotted at night. And Devilfish (*Inimicus didactylus*), members of the scorpionfish family, become active and plod



Black coral crab (*Quadrella maculosa*)

across the sea bed in search of prey. Colourful short-finned lionfish (*Dendrochirus brachypterus*) stay motionless biding their time, and gurnards glide across the bottom; their 'wings' outstretched.

Ouch!

The most feared animal that I encounter whilst taking photographs at night is the black spiny urchin. Hidden well away during daytime, they emerge at night - platoons of them - to do

battle with me. Their spines rise well above the reef, and whilst nosing around for subjects to photograph they escape detection, being black and outside my torch beam. Just as marine animals have devised their defence tactics, so ►



A Black-spotted puffer (*Arothron nigropunctatus*) dozes on a sponge

have I - if the area is known to be home to black spiny urchins I give that site a miss! Shame, because amongst those long black spines there is often interesting symbiotic life, well worth photographing.

Lady in red

Many of my night-time forays are specifically to track down one particular species of nudibranch. Lots of sea slugs and nudibranchs roam and graze at night, particularly bubble shells and sidegill slugs. But my search is for the Spanish dancer nudibranch (*Hexabranchus sanguineus*) found in the Indo-Pacific, and rarely making an appearance until well after dusk. One of the larger nudibranchs, it averages 20cm long, its colouring varies from pink to scarlet,



Soft coral polyps (*Dendronephthya* sp) filter nutrients from the water



Juvenile Many-spotted sweetlips (*Plectorhombus chaetodonoides*) swim with a wiggling action

depending on region, and it has a delicate feathery gill structure on its back. A beautiful animal in its own right, but often hidden within its gills is a small colour-matched Emperor shrimp. And, if I am lucky the nudibranch will be mildly irritated by my presence, flutter its skirt and lift up into the open water swimming with an undulating movement - just like a Spanish dancer!

Wakey wakey

The deeper into the night, the more activity there is, as more and more species awaken and go out in search of a meal. But then, when the sun has found its way round to the other horizon, life slows down again as the first rays of sunlight appear. Time for the dayshift again. [E]

THE NOCTURNALS

Many nocturnal fish such as Big-eyes, soldierfish and squirrelfish, are red coloured and have large eyes, usually gathering in small groups during the daytime, sheltering close to the reef in caves or under overhangs, and dispersing after dark to hunt away from the reef. Other night-active fish include cardinalfish, sweetlips, lionfish, moray eels and sweepers.



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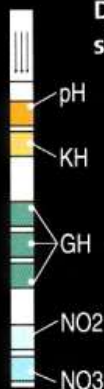


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ARE WE SEEING THINGS?

Difficult to spot and even more difficult to recognise if you don't know what it is! It only took Shaun and Beth Tierney several years to discover what it was they had seen that day on their dive in Hin Muang



All photos by Shaun Tierney

The robust Ghost pipefish spend most of their lives up in the water column

We were very young at the time. Well that's our excuse and we're sticking to it. We were down pretty deep in the bath-tub temperature waters of southern Thailand on a reef called Hin Muang (Purple Rock to those in the know). Anyway, it was dreadfully pretty, an unbelievable array of colours and tones, mostly purples and pinks, which is how the reef got its tag. Staring at one place for a long time can be a bit like those puzzles in a magazine... squint for long enough and a dolphin suddenly appears. Only in this case, my eyes settled on this rather hairy creature, just a couple of inches long. Getting closer we looked and frowned, what was it? We just couldn't tell, so we snapped a couple of frames then described it to Hans, our ►



Pipefish can adapt their bodies to blend in with their surroundings

Tropicals in the wild

divemaster, later on. We all decided it must have been a seahorse of some sort. Except it was upside down and hairy. Okay, okay, we were young and green and had no ID books with us.

Time passes

Several years later, we had learned a lot more about the marine realm and realised that the weird creature had been an Ornate Ghost pipefish. And several years after that, we met up with Hans again and reminded him of the dive. He even had his old logbook with him. He'd written 'seahorse' with a big question mark beside! It was a good laugh to look back at how naive we'd all been.

The family line

All pipefish are a member of the Syngnathidae family. That's the group that also includes seahorses, pipehorses and seadragons. The Latin name means fused jaw. There are 55 genera and more than 320

different species. However, ghost pipefish fall under the sub-family Solenostomus, which is a small and extremely exclusive set.

Scientists think there are only 10 species of 'ghosty', but there's lots of controversy as to whether that number is right. Up until 1993, 10 nominal species were recognised, but the debate rages that there are just four described species and possibly four undescribed ones. And even those four might be variations of the first four. Who knows? What we do know though, is there are plenty of common names for these beautiful little guys.

Creature features

Part of a ghost pipefish's life, and the reason for all that ID confusion, is that these tiny fish have the ability to change their appearance at whim... a bit like changing your party outfit to suit the time and place. However, their basic characteristics are much the

The tiny Ghost pipefish hide amongst the crinoids



WE ALL DECIDED IT MUST HAVE BEEN A SEAHORSE OF SOME SORT. EXCEPT IT WAS UPSIDE DOWN AND HAIRY

A yellow Ghost pipefish



A mother and baby hanging around together



This guy has a shrimp in his mouth



The Ornate Ghost pipefish are often referred to as the Harlequin!

BECAUSE THEY HAVE THE ABILITY TO ADAPT THEIR BODIES TO MATCH THEIR SURROUNDINGS THEY FIND IT EASY TO BLEND IN WHEREVER THEY ARE



An older juvenile Ghost pipefish

Can you spot which is the plant and which is the fish?



together

same. Ghost pipefish range in size from about seven centimetres to 15cm, so not much to talk about there, except to say that females are larger than males, and as they are often seen in monogamous pairs, it's easy to tell which is which.

All ghosties have comparatively short bodies, long snouts, two dorsal fins, a large anal fin and large pelvic fins. The female's pelvic fins are larger than those of the male and are connected to the body to form a pouch. Their latin name, *Solenostomus*, means 'tube-like snout' and refers to the small, pipette-like mouth that is used to suck up small shrimp.

Sex and the mating ghosty

Now things get a bit more interesting! Although closely related to seahorses, ghost pipefish reproduction reverts back to the more usual - the female carries the brood in the pouch formed by her modified pelvic fins. During courtship, the male approaches performing a swimming dance. He displays by raising and lowering his dorsal fin and his coloration intensifies during these displays. The female adopts a head down posture and directs the side of her

body toward the male.

The courtship lasts for around three days and is consummated when the pair press together, the female contracting and expanding her pelvic pouch to draw sperm into the eggs. 10 days to three weeks later and young ghosties emerge. They are transparent, quite large and already close to being sexually mature.

Cloak and dagger

One of the best features for divers though is that ghosties are also site specific. Because they have the ability to adapt their bodies to match their surroundings they find it easy to blend in wherever they are. And once they have picked a nice pink fan and turned pink, or a nice hairy bit of algae and gone all hairy, you are likely to find them in the same spot day after day. So seeing one is all about which ones look like what, and then checking that out!

Meet the family:

Ornate Ghosties are the prettiest and most delicate Ghost pipefish in the group. They are also often referred to as Harlequin Ghost pipefish and we've found them all over the tropics. They are usually ►

Tropicals in the wild



A game of hide and seek with this fella would prove a tough job!

WE STILL HAVEN'T LOST THAT INITIAL BURST OF EXCITEMENT AT SPOTTING ONE OF THESE TINY CRITTERS



A pink and white Ghost pipefish

These pipefish are blending in perfectly with their surroundings



on coastal reefs or in estuaries amongst rubble, and they are often in pairs or small groups of up to six individuals.

Roughsnout Ghost pipefish are a rarer breed altogether. Found in the Indo-Pacific and often hanging out amongst some algae covered rubble, they take on the appearance of what's behind them perfectly. Speckles, rough looking skin and hairy coatings make them hard to pick out from the background. Hairy Ghost pipefish are dead similar - might be the same or part of that riddle of how many there really are.

Delicate Ghost pipefish are similar in shape to ornates, these guys are obviously more delicate to look at, and their bodies are often transparent, making them even harder to spot, but if you do, you can pick the difference by noting a small fringing appendage half way along the bottom of its snout.

Robust ghost: If you're looking down at a blade of grass and wondering why it seems to be moving in a choreographed dance, you might find you're actually looking at the robust, although they lie most of their life up in the water column, dropping down to the seabed to breed. Then they take

advantage of any local vegetation for camouflage.

Halimeda Ghost pipefish: The green halimeda algae is often a great place to search for tiny crabs and shrimp, but there is a special ghostly that lurks there too. This is the smallest Ghost pipefish in the group at just 65mm long.

Longtail: These guys are nigh on impossible to spot, but at east fairly common on a reef. You then get the long-tail which is rare and they have only been spotted in a few places in the West Pacific. We've seen the pictures, but never the creature. One day!

The five senses

We still haven't lost that initial burst of excitement at spotting one of these tiny critters. Most recently, on a night dive in the Maldives, our torch beams highlighted a tiny ornate hiding in a crinoid. He was obviously fairly disturbed by our arrival and immediately dive-bombed out of the beam. Sadly, he dropped straight into the gaping jaws of an open clam. We both screeched NO... as we saw the clam jaws snap shut and stared at each other in horror. But as we glanced back again the clam spat him back out - phew, he lives to hide another day. 🐟

ORNATE GHOSTIES ARE THE PRETTIEST AND MOST DELICATE GHOST PIPEFISH IN THE GROUP



If you are wondering why this blade of grass is hairy - that's probably because it's a Robust Ghost pipefish

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SPOILING FOR A FIGHT

One of the biggest problems for the newcomer to the marine hobby, especially if they have not kept fish at all in the past, must surely be that of compatibility. Even the more experienced amongst us can still get unexpectedly caught out from time to time



The Spiny puffer - puffers can become very agitated at feeding time

The crux of the compatibility matter is the artificial nature under which our charges are kept. Close confinement will always go hand in hand with the potential for an outbreak of hostilities.

Territorial issues

Leaving aside the predator/prey side of aggression, many marine fish still exhibit aggressive behaviour in their natural habitat with disputes usually revolving around territory. However, skirmishes will usually be swift, with the defeated having a great opportunity to escape relatively

intact, either through flight into the vastness of the environment, or into the protective nooks and crannies of the reef.

As disputes are often about territory, it follows that the potential for aggression will be

multiplied many times over in the artificial environment and close confines of a marine tank, ensuring squabbles over territory or feeding are going to be a common occurrence. However, with a little experience, knowledge, good advice, and a little forward planning, they can be minimised, but rarely banished.

The fight for territory

Territorial aggression in an aquarium will be at its worst if one fish perceives another as a direct threat. Consequently, fish with similarities will be naturally aggressive to one another. This can be seen between

FISH WITH SIMILARITIES WILL BE NATURALLY AGGRESSIVE TO ONE ANOTHER

fish of the same or similar species; with fish of a similar shape and size; or between fish of similar body patterns and colours.

If there is no perceived threat from the newcomer, such as when the two fish have dissimilar needs, there is little need for an aggressive response. A large angel is a dominant fish, well equipped

to defend its territory and establish dominance at feeding times. The addition of small fish, perhaps a damsel or small wrasse, presents no threat at all to the angel. However, if you tried to place a similar sized angel, or even an unrelated large species with similar open water swimming and feeding habits, all hell would break loose. It is not always larger species that cause problems, for example damsels can be very aggressive to any similar newcomers.

Aggressive behaviour can suddenly occur with previously peaceful fish in established tanks. A fish reaching sexual maturity, or one attempting to expand its territory, are the two most likely explanations. Again, angelfish and



y
more



Clown pairs will prepare a site to spawn in captivity



Juvenile Clown triggerfish can grow into aggressive bullies



A careful mix

Fish such as triggers and puffers can become very agitated at feeding times, working themselves into such a frenzy that accidents may happen, usually by way of slower moving, timid fish getting accidentally bitten. Other fish behave like a whirling dervish when food enters the tank, streaking around in a manic fashion. Large wrasse are particular culprits in these cases, with such behaviour having a very unsettling effect on quieter species, often leading to them becoming excluded at feeding times. Attention must be paid to the stocking of the aquarium, to ensure voracious feeders and overly robust species are not housed with shrinking violets.

Natural thugs

There are some marine fish that are always going to be potential troublemakers, they can be just plain belligerent and unpleasant. Most triggerfish fall into this category and are equipped with a vicious set of teeth that can cause considerable damage, even to fish much larger than themselves. Some triggers can undoubtedly be ►

BIG MOUTH

The lionfish (*Pterois volitans, radiata and antennata*), Panther grouper (*Chromileptis altivelis*), Coral Rock grouper (*Cephalopholis miniatus*), and Emperor snapper (*Lutjanus sebae*), are all examples of predators with large mouths. You get your stocking wrong with these fish at your own peril.

Damselfish and clownfish are the two most common species that will prepare spawning sites in captivity; they will patrol and vigorously defend the area in close proximity to the site. The potential for trouble is limited, as a fairly small area of the tank is involved and other fish can easily avoid contact.

AGGRESSIVE BEHAVIOUR CAN SUDDENLY OCCUR WITH PREVIOUSLY PEACEFUL FISH IN ESTABLISHED TANKS



The Blue damselfish is not a threat to the angel

DOUBLE TROUBLE

Trouble will be almost guaranteed if you try to add a fish similar to the dominant fish of the tank. Evasive action for the weaker fish will be impossible and it will suffer constant harassment and may quite possibly skulk away and starve to death.

damselfish are prime examples and there is no easy solution other than the ultimate step of the removal of the aggressor.

An eternal struggle

Predator/prey relationships could be viewed as the most drastic type of aggression. It should also be the easiest for the aquarist to contend with, as common sense and a little knowledge is all that should be

required, although it has to be said, it is very easy to underestimate the size of the mouth and the prey swallowing potential of some predators. Size is the vital factor, as many predators consume prey in a single gulp, with some being able to swallow fish almost half their own size. Do not underestimate the capability or resolve of a predator, like a leopard it will not change its spots, the only thing that will keep tank mates safe is if they are large enough to not be regarded as prey.

Family life

Any fish, regardless of species, that ventures too close to the spawning site of a pair of fish will generally be subjected to hassle and harassment.

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Photos by Andy Lawrence



Large angels are dominant fish

LITTLE RASCALS

Smaller fish should not be overlooked: some damsel species have a well-deserved reputation for becoming increasingly belligerent bullies as they age. *Dascyllus trimaculatus* (Domino damsel), *Dascyllus aruanus* (Humbug damsel), *Abudefduf saxatilis* (Sergeant major), and *Abudefduf ocyodon* (Neon or Black Velvet damsel) all spring to mind.

viscously aggressive to virtually any other fish, but it is not always easy to predict the species with a taste for mindless aggression. In some cases it would be well known that you were getting a homicidal maniac, I would include *Balistapus undulatus* and *Balistes vetula* (Queen trigger) in this category. You may have to keep these fish virtually on their own in a show tank.

Quarrelsome - to say the least! Large surgeons and angels can be vindictive, especially once they are

DID YOU KNOW?
The innocuous looking False gramma (*Pseudochromis paccagnellae*), can be a spiteful fin nipper

established. With respective caudal spines or gill cover spines can inflict serious damage on other fish,

could not cope with. In a reasonably sized tank, spawn and nesting site protection should not

PREDATOR/PREY ACCIDENTS SHOULD NOT REALLY OCCUR, ALTHOUGH ANYONE CAN MAKE A MISTAKE

and often do. Care must be taken with the stocking mix and schedule. Angelfish such as *Holocanthus ciliaris* (Queen angel), and *Pomacanthus imperator* (Emperor angel), and the surgeonfish, *Acanthurus leucostemon* (Powder Blue surgeon), and *Acanthurus glaucopareius* (Gold Rim tang), are all examples of fish always spoiling for a fight.

Avoiding trouble

Predator/prey accidents should not really occur, although anyone can make a mistake. Careful selection and an attitude of 'if in doubt don't do it' when stocking a tank, should prevail. Sufficient research and careful selection of stock should also reduce incidents associated with feeding frenzy problems, the basic premise being not to mix boisterous and timid fish.

Arothron hispidus (Dog Face puffer), *Diodon holocanthus* (Spiny puffer), and *Thalassoma lunare* (Moon wrasse), come to mind as frantic feeders that timid fish just

be a major problem; although it would be a different matter if we were talking of a small tank and a pair of damsels.

Even with the best laid plans of careful stocking, whilst greatly reducing problems, peaceful tranquillity cannot be guaranteed. Territorial aggression is at its worst

AN AGGRESSIVE CLOWN

Problems can occur with *Botistooides conspicillum*, the clown trigger. It is an eye catcher and consequently very popular, but it can be unpredictable. The best approach would be to buy a small, juvenile clown trigger. This can work well, but there can be no guarantees as things could change as it matures and grows.

when a new fish is added to an established community, particularly with species such as triggers, large angels and surgeons.

Create a ceasefire!

There are measures you can try if you inadvertently trigger world war three in your tank. Maintaining complete darkness by draping the tank with a heavy blanket for the first 48 hours, or the use of a clear plastic divider placed within the tank. Removing the aggressor to another tank for a couple of weeks is another theory. All these ideas are aimed at disorientating the bully and making it too busy re-establishing itself, to worry about the newcomer. Of course you may unsettle the bully as to permanently reverse the situation, and plunge the bully into a state of shock and slow decline.

The above are the suggestions of experienced aquarists, but as we are dealing with biological entities they will not always work. These ideas do not replace good research, sound advice and a well thought out stocking schedule. If all else fails you have the final option: either the bully, or the new addition, has to go. **FIN**



Triggers can become excited at feeding time



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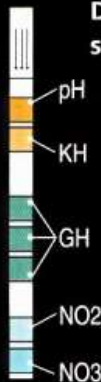
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LARGE AS LIFE

For me this is one of my favourite aponogetons, and no doubt a favourite of many others who have had the pleasure of growing this bulb plant

Coming from the family Aponogetonaceae, Aponogeton is the only genus of this small collection of tuberous plants.

Aponogetons are found throughout the tropics and subtropics from Australia and India, to Africa, with *A. ulvaceus* originating from Madagascar, though it is unlikely for us to obtain the true specimen of this aponogeton, as there have been many hybrids of *A. ulvaceus* over the years.

A big tank for a big plant

Be it a true specimen or not, this is one spectacular plant for the larger planted aquarium. With the leaves growing up to at least 30-35 centimetres, this plant requires some space, and the growth rate of *A. ulvaceus* is much faster than that of other aponogetons.

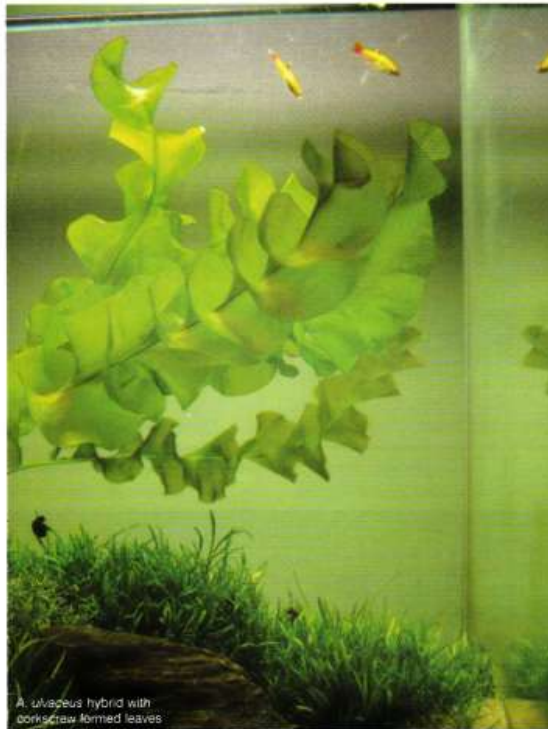
The leaf colour is of translucent lime green (when growing at its best), and grows between three and 10 centimetres broad. The shape of the leaves vary from wavy fluted, to a corkscrew, from a stalk like base leaf produced from a tuber.

Positioning

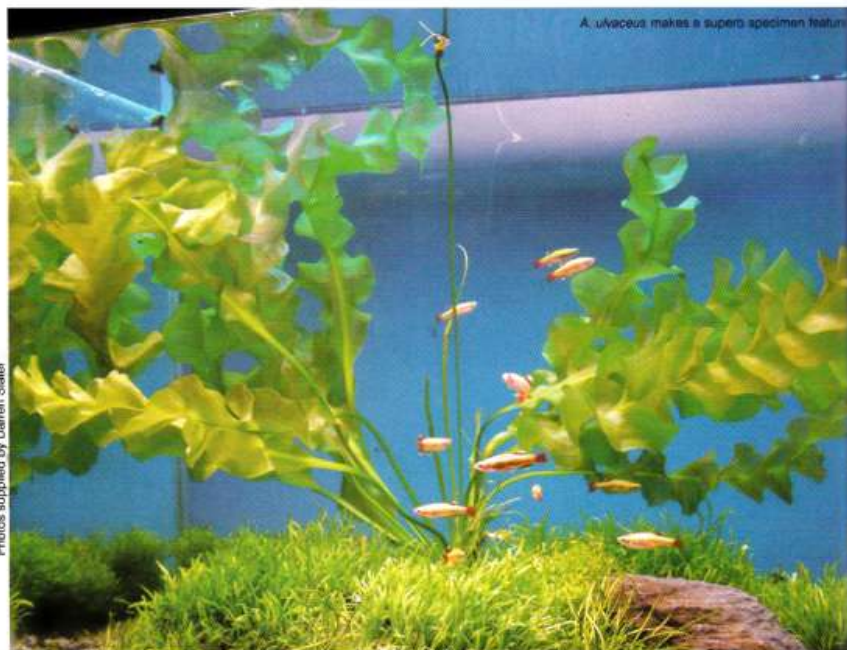
A. ulvaceus is best placed in the flow of a power filter, as this is one plant that collects sediment, or a daily gentle dusting down will be required. If sediment is allowed to settle for too long, the leaf develops a brown spotting and is not long after lost.

Hibernation period

Like many other aponogetons, *A. ulvaceus* requires a two to three month period of dormancy. This entails a dry period with a temperature drop to between 46-50°F (8-10°C). Annually the rest period falls after *A. ulvaceus* has flowered and seeded, though this can be slowed down if the flower spike is cut away before allowing to go to seed.



A. ulvaceus hybrid with corkscrew formed leaves



A. ulvaceus makes a superb specimen feature

There are several ways in which to satisfy the tubers requirements over this period. Only rest aponogetons if the tuber has grown in size since it was purchased as this indicates that enough food has been stored within the tuber. If not, then place it back in the aquarium for a time longer. Preparing the tuber for rest, the leaves should be cut away along with the roots, which will help prevent any rot down that will ruin the tuber.

The tuber can then be placed in moist sand or peat in a flowerpot, and placed on the window seal. Not allowing the substrate to dry out. Or allow the tuber to share the pot of one of your house plants, again choose a plant that requires its substrate to be kept from drying out.

After this rest throughout the winter, *A. ulvaceus* can be dug up and tried again within the aquarium. If there are no visible signs of life after one week, remove and give it a little longer in hibernation. **FIN**

Requirements

Light: Medium to high, full spectrum preferred.

Temperature: 68-79°F but does better at lower temperatures

Substrate: Sand 2-3mm particles rich in nutrients

Space required: 30-35cm min

pH: Acid to neutral

CO2: Beneficial 1-2 bps

Maintenance: Daily dusting

Fertiliser: Via substrate for best results

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Fish Forum

Are you bursting to share your ideas, thoughts or comments with other like-minded enthusiasts? If you have something to say, don't keep it to yourself; write to us here at *Tropical Fish* and you could be in with a chance of winning fish food from Nishikoi Aquaculture Ltd.

STAR LETTER

NOT AS GOOD AS THEY USED TO BE

Dear Tropical Fish,
Your latest 'Last Word' article in *Tropical Fish* (December) is most welcome. Restoration of wild-type tropical fish would be a wonderful achievement, but sadly, I can't see it happening. Today's moronic mass market demands low-priced freakish fish and seems incapable of judging quality. I can't see *Tropical Fish* magazine leading this fight effectively either. Perhaps some of the specialist clubs could get something off the ground - but I'm not optimistic. A copy of your article should be

nailed to the forehead of every importer of foreign farmed crapfish! The Beverley Sisters were just one person, moving about a lot sideways. (this is not widely known). That Nick Fletcher eh? What a scamp! Best Wishes
John Abbott, -Okehampton, Devon

Ed: Unfortunately Mr Abbott there will always be people out there who are more interested in making money than in animal/fish welfare. We all know it goes on, but as you say, it's a tough job to stop people doing it. As far as the magazine is concerned, we try, as best as we can, not to promote anything linked to this subject.

Myself, Dave, Scott and Victoria



HOLIDAY READING

Dear Tropical Fish,
I recently went on a great diving holiday to Oman with some friends, and of course we took our recent edition of *Tropical Fish* with us.

I really love the 'Tropicals in the Wild' section, and keep a note of where each species can be found when I'm diving in different places around the world. I just wanted to say what a

COLOUR ENHANCING

Dear Tropical Fish,
I've been feeding my freshwater fish a number of different foods to try and improve their colouration. Amongst my set-up I have Rainbow fish which seem to have lost a lot of colour during the last six months.

I don't want to name any specific foods that I've tried - but I have to say that what I've tried so far (so called colour enhancing foods) have not worked.

I have been feeding some live foods (as a treat) but this is not regularly, as I know you have to control the amount of live food they receive.

I wonder if the magazine has any tried and tested foods to recommend?
Carole Coomb - Spalding

Ed: Well Carole I know it can be tough to find a good food that your fish enjoy, and that does 'exactly what it says on the tin'. Next month Rupert Bridges health article will explain the feeding biology of fish, so this might help give you some idea of what you can do to really help enhance the colouration of your aquatic friends.

brilliant magazine this is, and send in this picture of myself, my fiancé, and my friends, enjoying our holiday!

Keep up the great work.
Sue Cheung - Bow, London

Ed: Thank you for your letter Sue. I hope you had a wonderful holiday. The weather certainly looks fantastic. And I'm glad you chose *Tropical Fish* magazine as your travelling companion!

STARTING YOUNG

Dear Tropical Fish,
Last year I bought my daughter, Ella Mae, her first fish tank - she's only four!

She loves fish, and as I keep a big tank at home and she watches me cleaning it, I thought it was about time she had one of her own. I know she is at a young age, but I bought her a small starter bowl for easy maintenance last Christmas, and it's amazing that she still loves it! Most children get bored with new toys/gadgets/pets after a few weeks - but she must be a real budding fish keeper - I'm so proud of her.

Regards
Darren James - Dorset

Ed: You are right Darren - these days there are so many new toys and gadgets coming out all the time, it's hard for parents to keep up! I'm glad you have found something that you both enjoy, and that can keep Ella happy for a long time to come.



A budding fish keeper!

AN / COM

Dear Th
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AN ANGEL DREAM COME TRUE

Dear *Tropical Fish*,

I have recently been travelling, and Thailand was one of the first places I visited.

Being a keen fish keeper I was very eager to be able to see tropical fish in their natural environment. I had one specific fish in mind that I know lives in Thai waters and I was lucky enough to see it as well!

My favourite fish of all time is the angelfish, and I keep two at home in my marine tank - so when I was diving at Phi Phi Island I kept my eyes well peeled for one. I didn't spot one on the first dive, but by my third dive (a few days later) I came across the magnificent site of the angelfish. The first thing that caught my eyes was the brilliant yellow and blue colourings and stripes. Unfortunately though, no sooner had I spotted it, then it disappeared, before I could even put the camera lens on it!

Never mind - at least I did get to see it - I really felt truly honoured. So, seeing as I didn't get a picture of the angelfish, I thought I'd send in a picture of myself relaxing by the pool after my dive! Ahhhhh!

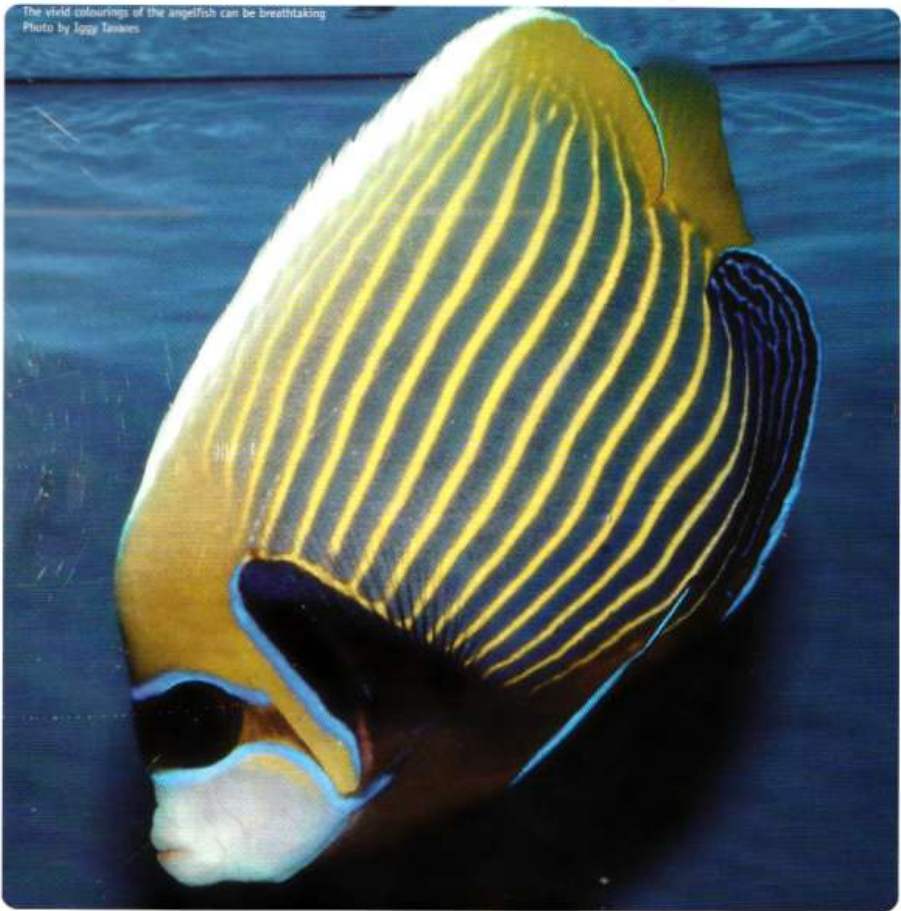
Regards

Miss L. Leake - Mayo, Eire

Ed: You were very lucky to have such an amazing holiday, and also to be able to see your favourite fish! What a wonderful experience, it's a shame you didn't get a picture, but I'm sure you'll always remember it. Thanks for the photo - it looks as though you had a great time.



The vivid colourings of the angelfish can be breathtaking
Photo by Jozzy Tanases



PLEC UP FOR ADOPTION!

Dear *Tropical Fish*,

I have been a fish keeper for 10 years and I have a large, and very lonely plec which needs a friend.

He is a lovely chap, and measures approximately eight inches in length.

I've been watching him for a while now, and noticed a change in behaviour, with similar signs a human would show when we are lonely.

The easy thing for me to do would be to go out and get

another plec to keep him company, but realistically, as much as I really hate to part with him, I feel that it would be much better to find him a new home.

So, if any readers in the south would like this beautiful specimen, then please feel free to contact me via email:

baldyjohn007@btopenworld

I would very much like to see this wonderful creature go to a new and loving home.

Best regards,
John via email

Ed: Well John, thank you for letter and I do hope you get some response. It sounds as though your plec has been a well-looked after pet, and that you will certainly be sad to see him go. But you are doing it for the right reasons.

If you like, you can always send us in a photograph, as it may help anyone that is considering adopting your lovely plec.

Best of luck and do let us know when he is safely re-housed.

The star letter each month will receive a Phillips 100g Tropical Flake (RRP £5.19) and Phillips Aquatabs (RRP £3.49). So why not drop us a line here at *Tropical Fish* and tell us your fish stories and news. Send all your letters to: *Tropical Fish* - Fish Forum, Freestyle Publications, Alexander House, Ling Road, Tower Park, Poole, Dorset. BH12 4NZ. Alternatively you can fax us on: 01202 733969 or email maria@freepubs.co.uk.

PHILLIPS



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MEET THE TEAM



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David Garratt
Is an expert on the husbandry of marines



Peter Hiscock
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Rupert Bridges
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alkaline at around the 7.6 mark, and we keep the temperature between 25-27°C. We currently have six danios, two angelfish and two Pakistani loaches, but as the tank develops we would like to add additional angelfish, a Red tailed shark, an Elephant nose, and if at all possible, some scats. We are aware the scats prefer brackish water, but have been told if we introduce them at an early stage to tropical water, they adapt and grow perfectly well.

Are our thoughts for the combination of fish suitable? Are any cichlids suitable? We have received totally conflicting advice with regards Blue acaras. Can you suggest any alternatives?

At some stage we would like to add a catfish, such as a Sailfin, a Polka dot plec or a Royal plec, we know they can grow very large and would make alternative arrangements for the future.

When would it be suitable to add the catfish as our plants are becoming covered in algae? And, are there any better types available, bearing in mind our inexperience?

Your advice in these matters would be gratefully appreciated

Yours confused
Peter and Molly Bamford
- via email

Fish keeping is not about providing conditions in which fish will simply survive, it is about providing the best possible conditions, and that is what we should all aim for. If this is not enough to put you off however, scats will also grow to a good foot in length and will rapidly devour your plants!

Apart from the scats, which we will consider excluded, the only other possible difficulty with your future fish choices would be the Elephant nose (*Gnathonemus petersii*). These fish need quite specific conditions, mainly dark areas in which to hide, good water quality, and a sandy substrate. There is a possibility that the Elephant nose may be harassed by Pakistani loaches, and Red Tailed Black sharks.

On the subject of Red Tails, these fish can become quite dominant in a community tank and may bully other fish, but a good alternative is the very similar, but slightly better

can catch them!

Once the tank is a couple of months old you can start to add catfish. It is important to wait this long, as to care for these fish properly they must be given their own source of food, which will add to the biological load on the aquarium. Bearing in mind your current fish and the possibility of adding Blue acaras, I would be inclined to choose quite robust algae eaters. To cover both hair and slime algae types, I would suggest a couple of Bristlenose plecs and a small group of Siamese Flying fox's (*Crossocheilus siamensis*).

If I can get away with plugging my own website, you can try using the community creator at www.thinkfish.co.uk to check any fish you may wish to add in the future against the ones already in your aquarium.

Hope this helps and good luck!
Peter Hiscock



The Elephant nose needs quite specific living conditions to thrive

Photo courtesy of Stewart Owen

natured Ruby shark.

Blue acaras (*Aequidens pulcher*) are often confused when young with Green terrors (*Aequidens rivulatus*), which may be the source of your conflicting advice. The two look very similar, although the Blue acara is much more peaceful and can be kept with other robust fish. Blue acaras will grow up to 15-20cm and are territorial, but peaceful, only becoming aggressive if breeding, although they will grow large enough to eat your danios - if they

Q AM I GOING MAD?

Dear Tropical Fish,

I have one of my tanks with male guppies in only, keeping both male and female separate to prevent in-breeding.

About three years ago I cleaned out all my tanks containing various

CONFLICTING ADVICE

STAR LETTER

Dear Tropical Fish,

As new converts to tropical aquatics from pond fish, we have recently, six weeks ago, purchased a Jewel 180, tank along with its standard lighting, heating and filtration.

We have added a set of reflectors to aid lighting and seemingly, are well underway to our goal of a community planted aquarium. However, our attempts at stocking the tank are being foiled by a myriad of conflicting 'advice', given by the staff, including purported owners, of our local fish stockists.

We regularly test our water quality, which appears acceptable, negligible ammonia and nitrite, the pH level varies, but seems to be

A Dear Peter and Molly,

The advice you were given on scats in freshwater is not entirely accurate. Scats naturally live in fresh and brackish water whilst young, but usually migrate to saltwater as they age. As with any other fish, its body functions and organs are designed to work under these conditions, and any deviation will become a stress causing factor. The difficulty here is that as far as we humans can tell, scats will appear to live perfectly well in freshwater for many years, whilst what is actually happening is that the stresses being placed on the fishes body are steadily reducing its life span, and leaving the fish open to ill health.

Star Q&A

The Star letter each month will receive a 50g tub of Medi Flake from Dorset Discus. It can be used for tropical fish, pond fish and koi, and is a carefully formulated anti-parasite, fungus and bacterial food to combat gill and skin flukes/intestinal worms/trichodina/white spot/leeches/lice and more. It contains no antibiotics or hazardous additives and is harmless to fish, plants and wildlife. For more information contact Dorset Discus at Unit 4, The Old Timber Yard, West Bay, Bridport, Dorset, DT6 4EL. Please include daytime telephone number or e-mail address

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Marine tanks are not cheap to maintain and this needs to be considered when setting one up. Photo courtesy of Jamie Biddulph

Q SAFE SAVINGS

Dear Tropical Fish,

I have a limited budget, but I really want to set up a marine tank. I already have the tank (80x26x26 inches), and my budget for the livestock, including live rock, corals and equipment, is £1,000.

I want to try and make some savings somewhere, but not to the detriment of the livestock - do you have any suggestions on where savings can safely be made?

Kind Regards

Mr B Charnard - via email

A Dear Mr. Charnard,

Unfortunately the words 'marine tank, livestock and live rock' are rarely sat together with the words 'limited budget'. Whilst you have tremendous potential because of the sheer size of your tank, this will only add to the cost, as it will require a correspondingly large budget to stock it.

You could keep to the basics when it comes to equipment, as there are many sophisticated systems that will be way beyond the budget you have set yourself. However, do not skimp on the basic essentials: ie: with regards to mechanical and biological filtration, protein skimming, lighting and water changes. Diligent water changes, water testing for nitrite, pH, phosphate and buffering capacity, with appropriate addition of essential trace elements and buffers, will help to monitor your tank without the need for a vast array of equipment extras. However, considering the cost of the live rock alone, I am sure you realise such an undertaking can never be achieved cheaply.

Not all the news is negative however, as you could spread the cost by maturing the tank and building your stock very slowly - this would also greatly improve your chances of success.

Dave Garratt

remedy can be beneficial when you first introduce the fish. If you want to be doubly sure that there is no problem, you can add a couple of fish from the main aquarium to the quarantine one, to check that nothing unnoticed is likely to be passed over. Make sure you have a separate set of equipment for both aquariums, to avoid transferring anything from one to the other.

Rupert Bridges

your query is still very perplexing.

You are apparently already familiar with the concept (whoops! No pun intended), that some female livebearers can store sperm and thus produce further litters of young fry without resorting to mating with a male beforehand. This would, on the surface, be the logical solution, were it not for the long time difference in between and the absence of male molly contact.

After much digging around in the aquatic literature, a reference was found stating that 'guppy x molly hybrids are not uncommon, although they all seem to suffer viability problems of one kind or another'. So here it seems, we have the answer to your riddle - it was a guppy that did it. Incidentally, the source of the information incriminating the culprit, was 'Livebearing Fishes' by John Dawes, Blandford 1991(p.115).

Hope this helps solve your mystery.

Dick Mills

Q FIN ROT OR NOT?

Dear Tropical Fish,

I've got a problem with disease in my tank and I need some help on how to go about treating and setting up a quarantine system.

I have a 190 litre tank with a mixture of Rosy barbs (*Barbus conchanius*), Golden dwarf barb (*Barbus gelius*), Tiger barb (*Barbus tetrazona*), a few rasboras and some guppies.

I'm sure the problem in the tank is fin-rot, but this is only a self diagnosis through reference books.

Please could you confirm the symptoms and give me some advice on a suitable treatment and quarantine system.

Regards

Mr. Goodyear - Southampton

A Dear Mr Goodyear,

Fin rot is generally characterised by ragged/eroded fins, which may be slightly reddened around the edges. Blood vessels may be visible within the fins themselves. Various bacteria may be responsible, so treatment with a good anti-bacterial remedy is needed. As with all disease problems, a thorough check of the water quality (pH, ammonia, nitrite, nitrate), followed by a partial water change and removal of excess dirt from the substrate is needed. This is especially important in cases of fin rot, as it is usually triggered by poor environmental conditions, or physical damage to the fins.

It is quite possible that your Tiger barbs are nipping at the fins of your other fish and causing this damage - keep a close eye on them to see if this is the case. They are especially bad at doing this when they are kept in small shoals, and should always be kept in groups of at least six.

If you want to set up a quarantine system, then you will need to keep it 'mature'. The best way to do this is to keep a few fish in it permanently, to ensure the filter retains a population of ammonia removing bacteria. When you add new fish, quarantine them for two to three weeks. Use of an anti-parasite

mollies, and gave them to my local pet shop. In cleaning out these tanks, like washing the gravel etc and all that is needed to do, this work was being carried out in my back garden with a cold water hose pipe and I noticed, while carrying out this work, a young fry and I was amazed it was still alive and decided it was worth saving.

After catching it, I floated it in one of my tanks (the one with the male guppies in) for a couple of hours, and then released it amongst its new friends. This fish, over a period of three years, grew up to be quite a large female silver molly, three times bigger than the male guppies.

One morning when feeding my fish I noticed it was lying dead on the bottom, but the amazing thing was in one corner of the tank, there were 12 young fry - but where did they come from? She was the only female fish in the tank and has never come into contact with a male molly. These 12 young fry have now grown up to become quite large green mollies about five centimetres in length and have extremely wonderful colouring when the light catches them.

Question - did she self fertilise, or did she cross breed with the guppies? I would be very interested in your answer.

Yours very sincerely,

Bernard La Roche

A Dear Bernard,

You'll be glad to know that you're not going mad, but the answer to

YOU ARE WHAT YOU EAT

We've now successfully stocked our tanks and everything should be running smoothly, with the new inhabitants enjoying their new home - so what better to settle them in than with a good, hearty meal

The requirement of food is an essential part of all living organisms, whether they are plants or animals. 'You are what you

eat' is often quoted by many, ranging from scientists extolling the virtues of correct diets, to manufacturers claiming that their product is the ideal source of vitamins, carbohydrates, protein and the minimum levels of fat.

A balanced diet

A balanced diet should be the aim of all, not just for us, but also for any animal in our care. Surprisingly, when it comes to fish, the majority of aquarists will assume their fish eat 'fish food'. This is not strictly true, as whilst a lot of fish live very well on a diet composed of something out of a container, labelled fish or aquarium food, there are many that require at least some other form of food, and all will benefit from it.

It is perhaps prudent to firstly look at a few basic facts before proceeding into 'trophic mechanics', or feeding, as most would prefer to call it.

Food as an energy source

A fish is a poikilotherm. That means that its body temperature is dependant on the temperature of the water it swims in. When the water is warmer, the fish will be more active due to the increase in its metabolism. It will consume more food and build up energy reserves ready for spawning. Conversely, when the water is colder, the fishes' metabolism slows down and therefore it eats less. A look at a garden pond throughout the year provides us with a perfect illustration.

In spring when the fish are beginning to respond to the increase in water temperature they start to feed, building up their

The pleco has a specialised mouth enabling it to hang on to a surface in a variety of positions - photo by Iggy Tavares



All photos courtesy of the author unless otherwise stated

Flake food selection



This is a range of food that is, or perhaps once was, aquatic larvae



THEY REQUIRE A SUITABLE DIET THAT PROVIDES THEM WITH THE RIGHT BALANCE OF NUTRIENTS FOR THEIR WELL BEING

strength and energy reserves for spawning. This continues through the spawning season and on into summer, when they can be quite often seen actively feeding at the surface. As the temperature cools the appetites lessen and the fish

become less active and are gradually less visible, until during winter in the colder months they are seen only rarely for the most part on warmer days, lying dormant on the bottom. Food consumption is at its lowest at this point, and

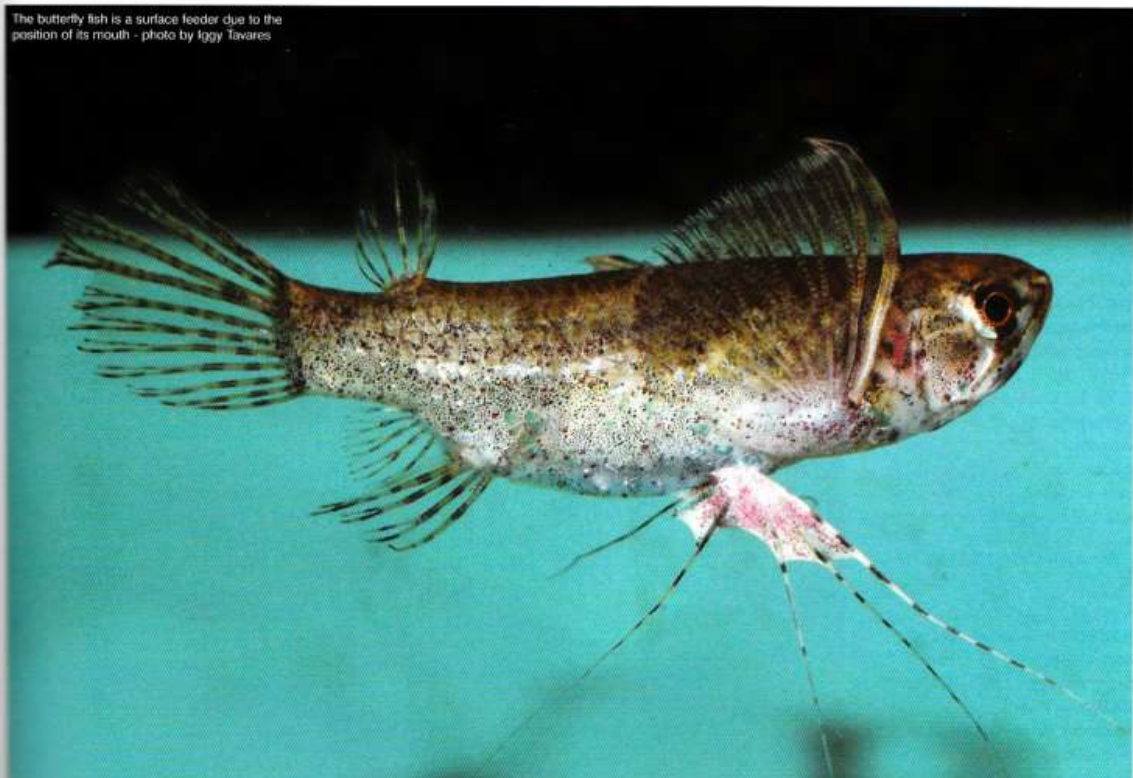
quite often fish do not feed for several days.

In stark contrast, fish indoors are maintained at a constant temperature as they are in their natural habitat, so the feeding regime is more constant, but ▶

CICHLID LIPS

Some of the cichlids of Lake Malawi have specialised lips to enable them to suck food out of rocky crevices, whilst others have teeth that are used as combs to search algae for food.

The butterfly fish is a surface feeder due to the position of its mouth - photo by Iggy Tavares



Step-by-step guide

Cichlid pellet food



Pellet foods that sink to the bottom of the tank are ideal for bottom feeders



should still be monitored regularly. They require a suitable diet that provides them with the right balance of nutrients for their well being. This should be balanced with all the required 'elements' in every aspect. The food, or foods offered should also be suitable for all occupants of the aquarium, and should take into account the numerous requirements of feeding, and methods of feeding, utilised by the fish in any one aquarium.

Mouth positions

Science argues that it is the feeding part of any creatures' anatomy that is the most important. As previously stated, if anything cannot obtain nourishment it will die. It is also the feeding mechanism that first responds to change in external factors, that is, it evolves fastest. It has to, simply because if the creature cannot eat, then extinction looms. We can learn a lot from the mouth, in our fishes' case, not just by its position and size, but by the structure and size of whatever is in it.

Top, middle or bottom?

A fish with a mouth that is positioned towards the top of the body will have a surface feeding habit. Gouramis, hatchet fish and the African Butterfly fish (*Pantodon buchholzi*) are ideal examples of this, although the latter is not an ideal community fish. Catfish, in

A FISH WITH A MOUTH THAT IS POSITIONED TOWARDS THE TOP OF THE BODY WILL HAVE A SURFACE FEEDING HABIT

many cases, possess under slung mouth structures which indicate they are bottom feeders. The Loricarids, the Armoured Suckermouth catfish known as 'plecs', have evolved a mouth structure that enables them to hang onto a surface in a variety of

positions, like a sucker while feeding on wood or algae, a strategy that has also been utilised by the Sucking loach (*Gyrinocheilus aymonien*).

Piranha feeding

The previously mentioned piranhas, perhaps the most infamous aquatic

predator next to the Great White Shark, use a different technique for hunting. The mouth is not over large, but possesses a series of razor sharp teeth with which huge lumps of flesh are quickly removed. Because of the large numbers of individuals involved when feeding, a large animal is quickly devoured.

Many of the smaller tetras, present in a lot of community aquaria are insectivores, eating



The Marbled hatchetfish is a surface feeder. photo by Iggy Tavares

DOWN IN ONE

Predatory fish have mouths which are obviously large and quite often set at an angle, and when striking, seem to have two 'gullets' at the side. This enables the fish to engulf a larger victim than may seem possible.

small aquatic animals, whilst the barbs, related to the carp, have a feeding mechanism that is less specialised, in the sense that their softer mouth can forage for food in the substrate, but can adapt to feed off an abundance of insect life should it present itself. The most common livebearers ie; platys and guppies, have a soft, highly positioned mouth which indicates a surface habit feeding on insects.

How to feed and what

The availability of prepared diets that can be purchased today is a stark contrast to that in the early years. The more dedicated of us (my father and later myself) would venture out, usually on a Sunday morning, whatever the weather, to a 'secret' location (basically a pond in a field) to collect live food. This consisted of daphnia, glass worm and occasionally mosquito larvae. The fish thrived on this diet making the dedication, hard work and the soaking when either of us fell in, well worth it.

The revolution

Then in 1959 a revolution took place. Ulrich Baensch of Tetra produced the first flake food, Tetra Min and with that, and the later arrival of the

THE AVAILABILITY OF PREPARED DIETS THAT CAN BE PURCHASED TODAY IS A STARK CONTRAST TO THAT IN THE EARLY YEARS

freezer, it enabled the long term storage of the same aquatic larvae used previously, and feeding became a lot easier and certainly from my point of view, drier.

How and what to feed is a question that needs answers to other questions before it can be answered itself, with any accuracy. Feeding a predatory animal such as a piranha, on flake food is a waste of time, as is feeding a Cardinal tetra on dead fish. Both species are characins and are related, but their dietary needs in respect of what and how big the food should be, are poles apart.



Note the position of the mouth on this hatchetfish. This makes it a surface feeder - photo by Iggy Tavares

Specific specie requirements

The species concerned and their requirements must be considered first. In a mixed community the situation of ensuring everything receives the right food in the right quantities has to be addressed. Quite often there will be shoals of tetras swimming in the middle to upper reaches of the aquarium, with small catfishes on the bottom. The possibility of the cats not getting enough is quite real, therefore, a correct regime involving several foods should be undertaken. Also, what is the right food? What do fish

HOW AND WHAT TO FEED IS A QUESTION THAT NEEDS ANSWERS TO OTHER QUESTIONS BEFORE IT CAN BE ANSWERED ITSELF WITH ANY ACCURACY

fat. Others, such as the carnivorous species of fish, cannot.

- **Vitamins** - There are many vitamins each with their own uses, and all required in various amounts, again depending on species. The most important ones are vitamin A, the B complex, D, E and choline. Others may be equally important, although research is still ongoing as to their benefits for fish.
- **Trace elements** - Again numerous, but perhaps the most important are calcium and phosphorous for bone development.

There is a plethora of foods available on the market for the aquarist to choose from. Obviously the listing of each brand and type is beyond the scope of this account as it meant to be a step-by-step guide, not a complete catalogue of aquarium delicacies. Detailed below are foods that are readily available, and their broad uses and benefits:

Dry or commercially manufactured foods

These are the most readily available of aquatic foods consisting of flakes, pellets, freeze dried larvae, ▶

want? A good diet should contain the following: amounts will vary as to the make and types of food

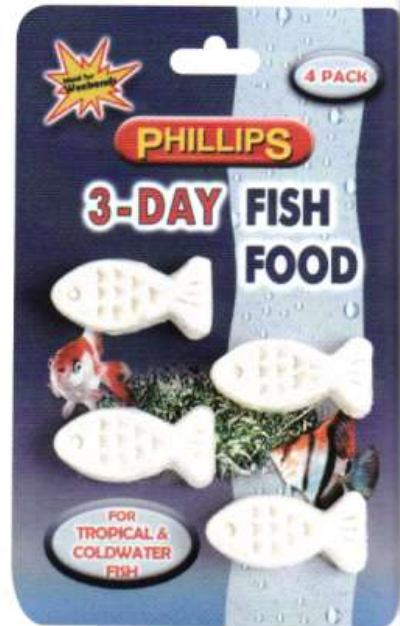
- **Fat** - This should be as low as possible.
- **Fibre** - This should be above the minimum level required of 2%.
- **Protein** - Essential for growth in all animal forms, this will vary depending on the species concerned, with predators requiring a higher intake than vegetarians.
- **Carbohydrate** - Again, the amount varies with different types of fish, some, like carp, being able to produce carbohydrates from body



Pellet food is of a similar composition to flake food, except that the end product is in a pellet

A FISH FEAST

This month *Tropical Fish* has teamed up with Phillips, to offer 25 lucky readers the chance to win a fantastic Aquarium Food Selection Pack



Question:
What are the common names of the two fish that appear on the Phillips Tropical Flakes label?

Name: _____

Address: _____

Postcode: _____

Telephone number: _____

If you do not wish to be informed of future products, please tick here

Phillips is probably the nation's longest established aquarium food brand, being the first aquarium flake food to be developed in the UK. Phillips goldfish and tropical foods have just been reformulated to make them even better for your fish, while helping to maintain a cleaner aquarium. To celebrate the launch of the new improved formulation, Phillips are offering 25 *Tropical Fish* readers the chance to win a Phillips Aquarium Food Selection Pack comprising:

Phillips Tropical Flakes (100g) RRP £5.19, Phillips Aquatabs (50g) RRP £3.49 and Phillips 3-Day Fish Food (4 Pack) RRP £1.99. Worth a total of £10.67.

How to contact Phillips
For more information on any Phillips products contact www.phillips-fishcare.com

How to enter
Answer the following question: What are the common names of the two fish that appear on the Phillips Tropical Flakes label? The first 25 correct entries received and opened will each win a Phillips Aquarium Food Selection Pack.

Best of luck!

SEND YOUR ENTRIES TO: 'Phillips Aquarium food' competition, *Tropical Fish*, Freestyle Publications, Alexander House, Ling Road, Tower Park, Poole, Dorset, BH12 4NZ.
Closing date for entries: 20th February 2005. Usual rules apply.

Grow with the flow

The floating plant *Salvinia* has been around for a while in the aquarium trade, partly due to its ease of growing. The plant is part of the true ferns group and originates in South America, although it is now widely distributed through Central America as well



An easy growing plant to brighten up your tank - Photo by the author

In many tropical and temperate regions, *Salvinia* is considered an invasive species and can quickly spread and block light to plants below the surface. In some cases, this is the ideal reason to use the plant in the aquarium - blocking some light is beneficial for timid or surface dwelling fish that may not appreciate intense lighting.

Appearance

The plant forms paired leaves on a central runner that will grow up to two centimetres in diameter. Young leaves are light green and lie flat on the water's surface, whilst older leaves fold upwards from a central crease and may have darker edges. The leaves are covered in many tiny hairs, which act to prevent water from touching the leaf surface, so that atmospheric carbon dioxide can

THIS PLANT WILL DO WELL IN AN EVEN WIDER RANGE OF TEMPERATURES, AND WILL EVEN GROW IN PONDS DURING THE SUMMER

be used, and to ensure the leaves float quickly to the surface.

Maintenance

Propagation can be achieved by dividing the runners, but the plant will separate by itself and under most conditions will not need any help. With good lighting and some nutrient content to the water, *Salvinia* should thrive. The addition of liquid fertilisers and a good source of trace elements will aid strong growth. If the leaves start to turn a lighter colour, it is a sign that there is not enough nutrient content in the water.

Environment

Lighting is not overly important; although heat from strong light can

burn the leaves, so make sure there is adequate ventilation between the water's surface and the light source.

The water's temperature is unimportant and although between 20-24°C is best; the plant should still grow well outside of this range and can be kept in unheated tanks.

Benefits

As with other floating plants, *Salvinia* obtains all its nutrients from the water, rather than from the substrate, so it makes an excellent job of removing excess nutrients, helping to combat algae and improve water quality. Older *Salvinia* leaves frequently die back, allowing younger leaves to break off and spread. As the leaves turn brown they should be removed to prevent the release of

pollutants back into the water.

A larger plant *Salvinia natans*, originating in Europe and Asia, is also commonly available and also referred to as *Salvinia*. This plant will do well in an even wider range of temperatures, and will even grow in ponds during the summer. The roots of *S. natans* are longer and more finely branched, and are excellent for fry tanks, both as a place to hide and as a source of food. **FIN**

DID YOU KNOW?
In ideal conditions, *Salvinia* can double the surface area it covers in two days!

Onwards and upwards



Valley Aquatics has been a well recognised aquatic retailer for the past 25 years and now faces some major changes. Rachel Bailey looks at some of the future plans that will help keep Valley Aquatics as popular as ever

I first met Barry and Linda Price way back in 1979, through the British Koi Keepers' Society, of which my late husband and myself were members.

At that time they were just about to embark on the formation of Valley Aquatics at Haslingden in Rossendale, Lancashire.

Many aquatic shops have come and gone over the years, but here we are, 25 years on, and Valley Aquatics is still going strong.

How it all began

In the early years, Valley Aquatics was synonymous with purchasing small koi (around four inches) and growing them on in a 120ftx4ft pond. The pond had a large poly tunnel erected over it, to keep the heat in and, due to the high temperatures, the growth rate of their koi was phenomenal - and so too was the growth of Barry and Linda's business. In fact, it was so successful that they had to start importing koi of all sizes, simply to keep up with demand.

What's on offer?

Set in four and a half acres, there is plenty to see at Valley Aquatics, with internal and external ponds, and a 100,000 gallon man-made lake. Originally the shop specialised



100,000 gallon man-made lake containing over 400 fish including, goldfish, golden orfe, tench and koi

in Japanese koi, but over the years, expanded to include fancy coldwater fish, tropicals and marines, and up until December 2004, the tropicals and marines were franchised out to another company. The business has also seen a café and a Bonsai studio come and go, and more recently a tractor museum which housed over 100 tractors that Barry had beautifully restored.

New beginnings

For the last couple of years Barry and Linda have gone into semi-retirement, now living down in Shropshire - together with the tractors! They have made regular visits back to Haslingden to mow the lawns and keep the staff in order, but the day-to-day running of the shop has been left in the capable hands of Brian and Mike.

EXTRAS

Whilst Valley Aquatics don't offer a pond-building service (yet), they do offer call-out and maintenance facilities and this is an area in which they are looking to expand. Additionally, many gardens have rockeries featuring as part of their pond landscape so, to complement this, Valley will be offering alpines, heathers and dwarf conifers.

Although they can be aggressive, the oscar is still a firm favourite with many hobbyists



The ground floor of the new 355 square metre building will house the new tropical and marine sections as well as coldwater fish and koi



The popular Harlequin always makes a welcome addition to any hobbyist's tank



The mezzanine floor will house a huge range of dry goods and tanks from most of the well-known manufacturers



Known as the Pagoda Pond there is a patio area with tables and chairs for customers to relax and enjoy watching over 100 koi in the pond

ANANHALL ARE PREPARED TO INVEST MONEY AND PUT VALLEY AQUATICS BACK ON THE MAP

However, after 25 years, Barry and Linda have decided to sell up - the regular trips from Shropshire to Haslingden meant that Barry couldn't spend enough time with his tractors! The good news is that Valley Aquatics is now set to take a major leap forward. Barry and Linda will be the first to agree that they've done no major marketing and advertising for the business for a number of years; likewise they've not injected any cash into the business or building itself. As a result they have been reliant upon word of mouth and long-standing customers. Needless to say, even in its present state, turn up at

weekends and you're hard-pushed to find a car parking space.

On the map
So, on 23rd December 2004, the new owners (Ananhall Group of

is to be erected onto the back of the tractor museum, and this will become the main entrance. The current toilets will be moved from outside, to inside the conservatory.

Marines and tropics
The tropical and marine section is no longer being franchised out and will all become part of Valley Aquatics. As a result a brand-new modern marine and tropical section is to be installed. Additionally, the amount of dry goods and equipment which has been on offer in the past will be greatly increased to ensure that customers can obtain all their aquatic requirements under one roof. Likewise the stocks of both tropical and marine fish will increase during the coming months

whilst it will close at 4pm on Sundays (instead of 6pm at present), there will be a late night opening on Thursdays until 8pm.

Mike Donlan has worked at Valley Aquatics for two and a half years, and during that time he has been improving customer relations. Whether you need information on a 'T' piece for your air flow, or a full-blown state-of-the-art filtration system, Mike will spend time talking to customers - it's an area which he feels is important: "If you're prepared to spend time with customers they will come back because they know they'll get the service they deserve." Customer liaison will also play a major part in the revitalised company with regular newsletters, competitions and special offers.

Obviously, all the above changes will not happen overnight, but between now and Easter major changes will be happening at Valley Aquatics, so why not pop down and have a look - you won't be disappointed. There's plenty of on-site car parking, plus hot and cold drinks, crisps and chocolate are also available if you're feeling a little peckish. **EM**

THERE IS PLENTY TO SEE AT VALLEY AQUATICS WITH INTERNAL AND EXTERNAL PONDS, AND A 100,000 GALLON MAN-MADE LAKE

Companies) took over Valley Aquatics, and together with their newly appointed Manager (Mike Donlan) and with the services of one of the region's leading marketing and design companies (D&M Creative) they are set to take the company forward. Ananhall are prepared to invest money and put Valley Aquatics back on the map as one of the forerunners of the aquatic business.

to provide a much larger variety for its increased customer base.

On the coldwater side, the variety of fancy goldfish will increase, thereby making it a specialist centre. On the koi side they will continue to sell the healthy fish for which they're renowned, but will also extend their range to include small numbers of high quality koi.

Plans for the future
The shop itself is to move into what was the tractor museum. This is a much newer and brighter building - 355 square metres, together with a mezzanine floor. A large conservatory

Opening hours
Traditionally, Valley Aquatics has been closed on Tuesdays and Wednesdays. Like everything else, this is set to change. The shop will be open seven days a week and

UPCOMING EVENTS

To mark the 25th anniversary of Valley Aquatics, a special event will be held over the Easter weekend (26 - 28th March) when there will be special offers, a bouncy castle for the kids, refreshments, and representatives from some of the major manufacturers to answer all your queries.

CONTACT DETAILS

For further information and/or directions, contact Mike Donlan at Valley Aquatics on 01706 228960 or simply call in to Valley Aquatics, Carrs Industrial Estate, Flip Road, Haslingden, Rossendale, Lancashire, BB4 5EJ.

20 QUESTIONS WITH... PETER BURGESS

Tropical Fish are delighted to talk with one of the most distinguished, esteemed names in the hobby - Dr Peter Burgess PhD



1. What is your name and age?

Peter Burgess. As for age, well I am old enough to remember putty being used to seal aquariums!

2. How long have you been in fish keeping?

Since I was seven, I have never been without an aquarium since.

3. How did you get into the hobby?

My parents bought me a two foot, tropical aquarium for my birthday. I was hooked!

4. What do you remember about your first aquarium?

The rather bulky and complex filter

unit! It was a glass contraption, with lots of pipe-work - quite different to our modern power filters.

5. What were the first fish you kept?

Bronze catfishes, harlequins, Checker barbs. And, how could I forget - guppies!

6. Are there any fish that you would never want to keep and why?

I am not a fan of 'tank-buster' species such as Red-tailed catfishes, pacus, giant gouramis and the like. I feel the hobby should not be trading in such monster fish. They are best suited

to large public aquarium displays.

7. Do you belong to any clubs and societies?

Yes, too many to mention! I am a long-standing member of the Plymouth and District Aquarist and Pondkeepers Society, and am very honoured to be Vice President of the Catfish Study Group, UK. Societies are a great way to share interests and experiences with others.

8. How did you embark on your scientific career?

Academically, I didn't fare well at school, leaving with just a few O' levels. I made up for it by studying

on a 'day-release' basis while working as a technician within various university biology and zoology departments. After graduating with a parasitology degree I worked for several years on human tropical diseases, including malaria and leprosy (fascinating times).

9. How did you switch to a career with fish?

In 1987 I decided to take the plunge and enrol for a full-time MSc degree in Fish Biology at Plymouth University. It was the best move I ever made. I stayed on at Plymouth to study whitespot disease in



The Checkered barb was one of the first fish Peter ever kept

Photos supplied by the author unless otherwise stated



Spring-fed river in Mexico
with snorkelling

tropical fish for my PhD. This opened the door for a career as an aquatic consultant.

10. What sort of fish work do you do these days?

My main work is that of Senior Consultant to Aquarian's® Advisory Service - a varied and fascinating job, including answering technical fish keeping enquiries from the general public. I also run fish husbandry training courses for fish scientists, vets and aquatics retailers. Aquarian® generously sponsor my part-time lectureship in Aquarium Sciences and Conservation at Plymouth University - teaching on my old MSc course. When time allows, I write fish-keeping articles and books too.

11. What's your advice to our younger readers who may be

thinking about a career in aquatics?

Consider the sorts of aquatics jobs that are of interest and try and speak with people who are already employed in these areas of work. I would recommend embarking on one of the excellent aquatics courses run by colleges such as Sparsholt College (Hampshire) and Brooksby College (Leicestershire). Qualifications count for a lot, but practical fish-keeping skills are important too.

12. If money were no object, what aspect of the hobby would you like to follow?

I'd love to build a huge heated greenhouse and construct a vast tropical pond surrounded by exotic plants and trees. On reflection, I suppose it would be easier to move to somewhere warm and have a garden pond filled with tropicals!

13. Do you have any plans for new purchases?

It's been ages since I kept and bred gouramis and fighting fish. I am thinking of acquiring some of the unusual fighting fish (Betta species) that are now available through the hobby.

14. What benefits/satisfaction do you get from fish keeping that keeps you interested?

It is such an educational hobby, especially if one breeds fish. With over 2,000 species of aquarium fish to choose from, how could one ever tire of this wonderful past-time?

15. Do you have a favourite aquarium book that you recommend?

I love the Baensch's Aquarium Atlas series - perfect for reading up about a particular species of aquarium fish.

16. In today's modern society, do you think fish keeping has been left behind?

To some extent. I find it sad that many children (and adults) spend so much time in front of a computer screen. I feel sure there will be a revival in other past-times, including fish keeping.

17. Have you observed tropical fish in their wild environment?

I have been fortunate enough to visit several coral reefs and tropical freshwater habitats. One memorable experience was snorkelling in a spring-fed river in Mexico, swimming among mollies, cichlids and tetras - it was just like being in a huge aquarium!

18. What are your views on public aquariums?

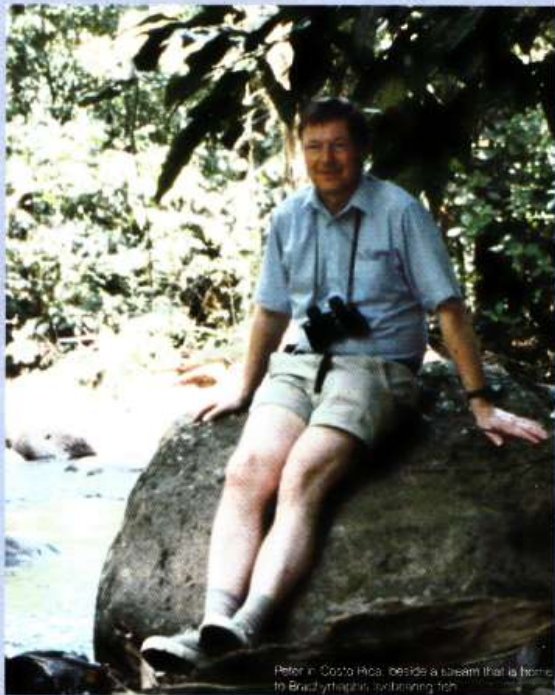
I am all for them, provided they meet acceptable standards of fish husbandry and welfare - most do. Many public aquariums undertake important fish conservation work, helping to save rare fish from extinction.

19. If you could give one piece of advice about the hobby what would it be?

To read up about the needs of a particular fish species before making a purchase. Impulse buying is a recipe for disaster.

20. What is your favourite fish keeping magazine?

I like them all, but for different reasons! I am more inclined to dip into a magazine if it contains an article by an author whom I respect.



Peter in Costa Rica, beside a stream that is home to *Bradystrophia*, a fighting fish

Club scene

News from societies around the country

The 'Club Scene' pages are here to keep you up to date with the latest news and events from around the UK. If your club or society is not featured on these pages and you would like them to be, just send your details to the usual address, (bottom of the page) or email maria@freepubs.co.uk - let's all keep in touch!

Corby and District Aquarist Society
President: David A Page -
Tel/Fax: 01536 790932 email:
www.david.a.page@btinternet.com
Chairman: Roy Bryan - Tel: 01536
724803 www.cadas.org.uk

Meetings held at the Stephenson Way Community Centre, Stephenson Way, Corby, Northamptonshire on the first Wednesday of each month, starting at 8pm. Most months a second meeting will be held, the time and place will be announced when details are established.

Catfish Study group (UK)
Chairman: Ian Fuller - Email:
ian@corycats.com, Tel: 07976 814387
Visit: <http://www.Catfishstudygroup.org>
The home of Corydoradinae Catfish:
<http://www.corydoras.myby.co.uk>

Diary Dates 2005

20th February - Covention 2005 (Speakers - Shane Linder, USA and Julian Dignall, UK)
20th March - Spring Auction. For pre-booking call Roy Barton 01942 248130
17th April - Talking about: Pims, large and small
15th May - Talking about: A closer look at Mochokidae
19th June - Talking about: Miniature catfish
17th July - Talking about: Catfish, self defence
14th August - Talking about: The specialist feeders
18th September - Annual Open Show & Auction. 27 catfish classes. Pre-booking for the auction, call Roy Barton 01942 248130
16th October - Talking about: The specialist feeders
20th November - Autumn Auction. For pre-booking call Roy Barton 01942 248130
11th December - Annual Hot Pot

All meetings held at St Elizabeth's Church Hall, Aspall. With the exception of the September and November meetings, there will be a limited fish and plant only auction held at the end of each meeting (30-45 minutes). Lots to be pre-booked through the auction manager. Anyone may attend these auctions, but only paid up members may enter lots.

Southend, Leigh and District Aquarist Society
Hon. Secretary: Chris Cheswright - Email: cheswright@blueyonder.co.uk
President: Rob Reader - Email: robreader@hotmail.com

Meetings held at St. Andrews Church Hall, Southview Drive, Westcliff on Sea, Essex. On the first and third Tuesday of each month, starting at 8.30pm promptly.

Strood & District Aquarist Society
www.stroodaquarist.co.uk
Hon. President and Secretary: Peter Cottle
Vice President: C Cheswright
Vice President: R C Mills
Chairman: Ken Biggs

We meet on the 2nd and 4th Tuesday of each month at Crispin & Crispinians, 8 London Road, Strood, Rochester, Kent. ME2 3HT. Tel: 01634 719912

Preston & District Aquarist society
Chairman: Steve Spencer

Treasurer: Phil Kay
Secretary: Sherril Byers - Tel: 01772
321743 Email:
SHERRIL_BYERS@HOTMAIL.COM

Iford & District Aquarist and pond keepers society
President and membership secretary: Len Smith - Tel: 0208 5507329
Chairman: Mike Shadrack
- Tel: 0208 5297173
www.ifordaquarists.co.uk

We meet on the second Monday of each month at The Library Rooms, Spratt Hall Road, Wanstead, E11. Please check the website for dates. The door opens at 7:30pm and the meeting starts at 8:00pm and finishes by 10:30pm at the latest.

The Goldfish Society of Great Britain
PRO: Michael Pepper - Tel: 01903 815734
email:
pepper@fishflowers.freereserve.co.uk

Meeting dates for 2005
19th March, 21st May, 16th July, and 19th November. Open Show, Woodford Bridge, Essex - 1st October.
We issue a bi monthly bulletin. All meetings are held at the London City YMCA, Errol Street, EC1. Membership is £12 per annum.

Bristol Tropical Fish Club (BTFC)
Meet at the BAWA pavilion, Southmead road, at 8pm. For more information contact **Jon Stevens on 01179 732145**.
www.BristolTropicalFishClub.org.uk

Thorpe and District Aquarist society
Meet on the third Monday of the month at 7.45pm at the Norfolk Dumping, Norwich. For more information contact **J Bedingfield on 01953 605394**.

Robin Hood Aquarists
Meet on the second Monday of the month at 8pm at the Highbank Community Centre, Farnborough Road, Clifton, Nottingham. For more information contact **Matt Talbot on 01159 893708**.

Kirkcaldy Aquarist society
Meet every Monday at 8pm at 19-21 Junction Road, Kirkcaldy, Fife. For more information contact **Joe Graham on 01592 782964** or **John Reid on 01738 634689**.

Dunstable and District Aquarist society
Meet on the second Tuesday of every month at 8pm at Farley Hill Methodist Church Hall, North Drift Way, Farley Hill, Luton. For more information contact **Karen Goodrum on 01582 707280**.

Telford and District Aquarist society
Meet on the second Wednesday of every month at Hollinswood, Telford, Shropshire. For more information contact **Richard Armstrong on 01952 616410**.

Greenock and District Aquarist society
Meet every second and fourth Tuesday of the month (except July) at Crawfordburn Community Centre, Bawthirley Road, Greenock.

Greater Manchester Cichlid society
Meet on the last Tuesday of every month at Littleborough Conservative Club, Peel Street, Littleborough. For more information contact **Carl Freeman on 01422 842155**.

York and District Aquarist society
Meet on the second Tuesday of every month at the Clarence Garden Hotel, Haxby Road, York at 8pm. For more information contact **Keiron Corbett on 07767 698331**.

The MMAS (Midland Marine Aquarist society)
Meet on the third Tuesday of every month at 8pm at The City Tavern Public House, Bishopgate Street, off Broad Street, Birmingham City Centre. For more information contact **Warren McKenzie on 0121 3594469** or **Ian Moore on 0121 449 3246**.

Tongham Aquarists
Meet every third Wednesday of the month at 8.30pm at the Mytchett Community Centre. For more information contact **Andy Pearce on 01252 25686**.

Hounslow Club
General Secretary: Wendy Abarrow, Tel: 0208 8906933 or visit
<http://myweb.tiscali.co.uk/hounslowfish>

Meetings begin at 8pm and are held on alternate Wednesday evenings at: St Stephens Church Hall, Parkside Road, Hounslow, Middx. Parkside Road can be found on the left as you leave Hounslow, heading south west on the A314.

Ryedale Aquarist society
Meet on the first Wednesday of every month at the Bay Horse Hotel, Market Place, Pickering, North Yorkshire. For more information contact **David Marshall on 01751 472715**.

Merseyside Aquarist society
Meets every other Wednesday at the Cattle Market pub on Prescott road, Liverpool. For more information contact **Ron on 0151 4284407** or **Keith on 0151 2016085**
Email: keith.liz@lneone.net

Portsmouth Aquarist society
Meet on the first and third Wednesday of every month at 8pm at Portsmouth Community Centre, Malins road, Buckland. For more information contact **Gill Utting on 02392 525739**.

Kings Lynn Aquarists society
Meet every second Thursday of the month at Workers Club, Church Street, Kings Lynn, Norfolk. For more information contact **Mike Laws on 01553 763743** or **Bob Usher on 01553 769522**.

Yorkshire Cichlid Group
Meet every second Friday of the month at St Anne's Church Hall, Wrenthorpe. For more information contact **Phil Oldridge on 01924 367086**.

Northwest Cichlid Group
Meet on the first Friday of every month at 8pm at the British Legion, Liverpool Road, Skemersdale, Lancs. For more information contact **Dennis Leach on 01942 707593**.

West Cornwall Fish Keepers
Meet on the second and fourth Friday of every month at 8pm at Camborne Community Centre. For more information contact **Alan on 01736 79485**.

Aberdeen Fishkeeping Club
Meet on the second Tuesday of every month at 7.30pm in Murdos Lounge function room, Anderson Drive, Aberdeen. Contact **Dave Gamble on 01224 826517**

Other associations

The BKA (British Killifish Association)
This association has been running for over 40 years. They produce a monthly newsletter. Membership is £17 per year, available from Cliff Griffiths on 01527 523635. Email: cliff.1@tiscali.co.uk
Visit: www.bka.org.uk/index.php

The FBAS (Federation of British Aquatic Societies)
<http://www.fbas.co.uk/Societies.html>
Founded in 1938 and has over 140 societies affiliated as members. Membership of local societies helps fish keepers solve any problems and keep in regular contact with other aquarists.

The FNAS (The Federation of Northern Aquarism Societies) <http://www.fnas.co.uk/>

The A of A (Association of Aquarium Societies)
Contact **Chris Ralph**
Scalesntails@btinternet.com

The YAAS (The Yorkshire Association of Aquarium Societies) Chairman: **Steve Jones**
derekj388@aol.com

The FSAS (The Federation of Scottish aquarium Societies) Contact
davidmillerFSAS@hotmail.com

Cichlid City - www.cichlidcity.co.uk

British Cichlid Association
PO: **Craig Wade**, cwade025@aol.com
SAE for information, £3 for sample publications. Send to: BCA Dept TF, 70 Morton Street, Middleton, Manchester M24 6AY.

If any information on this page is incorrect or needs amending please contact **Maria on 01202 735090 ext: 255** or email maria@freepubs.co.uk. Write to: **Tropical Fish - Club Scene**, Alexander House, Ling Road, Tower Park, Poole, Dorset. BH12 4NZ. Thank you.

UPDATE

The 'Club Scene' pages are updated every month, which means that diary dates are deleted as they take place. To keep your club up to date please send in your event dates as soon as they are confirmed. Thanks Ed.

WE WANT TO HEAR FROM YOU!

If you would like to add your club to the list, or shout about something great, send in the information and some pictures (if you've got any) to: Club Scene, Tropical Fish, Freestyle Publications, Alexander House, Ling Road, Tower Park, Poole, Dorset, BH12 4NZ, fax 01202 733969, or e-mail: maria@freepubs.co.uk

KEY TO SOCIETY LOCATIONS

IF YOU WOULD LIKE YOUR SOCIETY TO BE ON THE MAP, LET US KNOW



Advanced section



The Think Tank

The monthly guide to advanced fish keeping

Photo by David Stephens

57

FILTRATION

Craig Baldwin begins a new series on methods of filtration

60

PLANTS PAGE

Chemical warfare in the journey through the planted aquarium

WASTE NOT, WANT NOT!

Most fish keepers are aware that their filtration system should break down or remove the toxic waste products that are produced by their fish. Many fish keepers may also be aware that an accumulation of these waste products may lead to a serious decline in water quality, together with a range of fish health problems

The fish keeper that is aware of the sources, characteristics and impact of fish waste products will not only be able to

choose the most appropriate form of filter for their aquarium, but they will almost certainly notice an improvement in water quality, together with an improvement in the health of their fish.

Forms of filtration

Although a filter unit may consist of many components, the most effective form of filtration will depend upon the type of waste produced by our fish. Fish that produce large amounts of solid debris, such as some of the larger cichlids or other 'tankbusters', are likely to require a significantly different form of filter, than a species that produces a higher proportion of soluble waste, such as the tangs or tetras.

Although there are a variety of filters available to the aquarist, most filters have at least two common units:

1. **Mechanical filter** - traps solid debris. Classified as either sieve filters to trap solid debris as it flows through a sieve plate, or gravity filters to encourage solid debris to fall to the base of the filter under the influence of gravity. Mechanical filters are usually included before the biological filter. Species of fish that produce large quantities of solid waste will require an effective form of mechanical filtration.

2. Biological filter

Utilises a range of aerobic (oxygen consuming) micro-organisms to convert toxic ammonia into less toxic nitrite and nitrate. This form of filter encourages nitrifying organisms to grow on a specialised surface over which the waste laden water is passed. These organisms

break down toxic soluble wastes such as ammonia and nitrite, into less toxic forms of waste. Biological filters are usually included after the mechanical filter.

Importance of mechanical filtration

Although most fish keepers are aware of the role of the biological filter, many may be unaware that the efficiency of any biological filters will be reduced if solid debris is allowed to accumulate within it. The solid debris encourages the growth of a range of micro-organisms that consume both solid waste and oxygen, and are capable of out competing the nitrifying organisms required to breakdown ammonia and nitrite. These waste consuming organisms breakdown the comparatively complex solid wastes, into simpler and simpler forms. Eventually this solid waste is reduced to such a simple chemical form, that it contains only hydrogen and nitrogen, and is referred to as ammonia.

Efficiency

The most efficient filtration units will ensure that solid debris is not allowed to enter the biological filter. Many commercial filtration units combine both mechanical and biological filters within the same unit. However, the performance of almost every filter may benefit by swapping the internal compartments around, and ensuring

THE MOST EFFICIENT FILTRATION UNITS WILL ENSURE THAT SOLID DEBRIS IS NOT ALLOWED TO ENTER THE BIOLOGICAL FILTER

that the mechanical filter removes any solid debris before it enters the biological chamber.

The efficiency of many traditional forms of aquarium filtration, such as the under gravel filter, may begin to decline if solid debris is allowed to accumulate

Swapping the internal compartments of an external canister filter



within the area of the filter that is associated with biological filtration. Any build up in solid debris within the gravel bed will require the aquarist to undertake regular 'gravel syphoning'. As even

the most effective and expensive form of mechanical filtration will require the solid debris to be removed before it is allowed to decompose and reduce water quality, the aquarist should always consider the ease by which this sometimes dirty, and frequent job has to be undertaken.

Un-ionised Ammonia

As long as the fish receive an adequate supply of oxygen, the key factor that will limit the number of fish that we can keep, and the health of our fish, is the accumulation of nitrogen based waste products. Whilst many forms of nitrogen may be associated with any aquarium, the key form of nitrogen based waste that is of concern to the fish keeper, is un-ionised ammonia.

Major forms of nitrogen in filtered systems

Un-ionised ammonia (NH₃-N) is very toxic, even in very small quantities. The primary mechanism of ammonia toxicity is unknown. ▶

CHEMICAL WARFARE

From time to time there's always a plant or two that just won't grow in our planted aquariums. When all the water parameters are in check and there's sufficient lighting and CO₂, there's no visible signs of disease, snail/fish consumption or nutrient deficiency, and of course the plant isn't due for its winter period of dormancy - this just leaves us puzzled



Is this allelopathy at work here, stunting the growth of *Rotala rotundifolia*?

All photos by the author

But, the plant next to the struggling specie is doing so well, I just don't understand it," I hear you say, with your head in

your hands. Unbeknown to us, there may be other forces at work here.

In the past, I have tried to think of every reason as to why certain plants just don't do well in the chosen aquarium position.

Things such as, maybe the plant is over shadowed by a taller specie, or there's a dead area of substrate, may be reasons. But to remedy these situations I have placed a

fertiliser ball underneath the dieing specimen, and cleared the way for full light penetration - all to no avail I might add.

But, what gets you even more confused is if you have the same

Allelopathy

Allelopathy is a term that is more commonly recognised among terrestrial plant enthusiasts, or people with very green fingers. There is a wealth of information

production and release of a chemical that protects the plant specie, either from invasion by that of another plant specie, or to prevent the consumption by herbivores.

Chemical compounds are excreted either through the leaves, roots, thorns or spikes. Tera-firmer plants, such as the common stinging nettle show the excretion of such chemicals. Another common plant defence is the production of chemicals that may leave a nasty taste or much worse, for other animal species.

Some of the chemicals known to play their role in allelopathy belong to a large group of

IT WASN'T UNTIL I'D READ DIANA WALSTED'S BOOK, 'THE ECOLOGY OF THE PLANTED AQUARIUM', THAT I HAD EVEN HEARD OF ALLELOPATHY

plant specie placed in another part of the aquarium, and that one is doing so well it looks artificial.

It wasn't until I'd read Diana Walsted's book, 'The ecology of the planted aquarium', that I had even heard of Allelopathy.

out there for land loving plants, but alas, not a lot for their aquatic cousins.

So what is the phenomenon 'allelopathy'?

This term, generally speaking, is the



Plants living co-dependently together

chemicals known as phenolics. These are a group of compounds derived from other hydrocarbons, inclusive of sub groups, such as tannins and flavonoids.

Flavonoids

The flavonoids produced in plants play many different roles, more commonly to do with the function of plant pigmentation, predominately the red, pinks, blue, and purples, and being the plants own chelate of iron ions. The flavonoids, role of defence is linked to such protection as from pathogen attack. They are contained in the plant's leaves for protection against UV-B radiation. These compounds achieve this as they absorb the light in the UV-B range, and allow visible light to continue its way for the power source for photosynthesis.

It is thought that flavonoids released in concentration from one plant specie are toxic to another plant specie. The flavonoids are not excreted though the leaves, roots or stem of a plant, but instead are released during the decomposition of the species aged leaves, allowing the plant to keep its place in the world.

Though speaking in the strictest of sense, the release of toxic chemicals from dead leaf litter may not fall into the definition of allelopathy.

Tannins

These are polymerised flavonoids. They are a group of molecules that have a double or triple chemical bond. This is a toxin that reduces the growth and indeed the survival ▶

IT IS THOUGHT THAT FLAVONOIDS RELEASED IN CONCENTRATION FROM ONE PLANT SPECIE ARE TOXIC TO ANOTHER PLANT SPECIE



Photo by Matt Williams - after just three weeks Riparia fluitans totally overtook the Microthelum micranthoides



Photo by Matt Williams - Nymphaea sp. breaking through towards the light source that will one day fuel the vertical battle for its life giving energy



A before shot of an aquatic plant slowly losing the battle for territory

SOME SCIENTISTS WHO HAVE CARRIED OUT TESTS ON AQUATIC PLANT SPECIES HAVE FOUND VERY IMPORTANT RESULTS

of herbivores. Many herbaceous insects will avoid eating plants that produce a lot of tannin, and so tannins are used widely as an anti grazing chemical.

Other allelopathic chemicals include: alkaloids, cyanohydrins, sulphides, terpenoids, steroids, lactones, phenolics acids, and aliphatic acids to name a few. All these compounds have their specific roles to play in the plant's defence.

Unfortunately, there is no off the shelf book or guide for us hobbyists as to what plants are to live in harmony along side each other. It is left down to us to study our home aquariums and make notes.

Science and the hobbyist

Though research into aquatic plant allelopathy is carried out in universities around the globe, it is very rare of their findings to be thought as of interesting to us hobbyists. To the scientists their concerns are, quite rightly so, more about environmental issues.

Some scientists who have carried out tests on aquatic plant species have found very important results, importantly so for the environment, and undoubtedly would be greatly appreciated from aquatic fanatics everywhere. The tests are carried out in small bodies of water giving

the plants optimum growing conditions. Results for example of plants that release compounds that are toxic to *lemna minor* (duckweed), have been found.

These results included plants such as *Cabomba caroliniana*, *Juncus repens*, *Nymphaea ordonata* and *Potamogeton foliosus*. Whereas test results showed *Potamogeton amplifolius* was found to wipe out

Vallisneria americana, and *Sagittaria suddulata* destroyed *Potamogeton sp.*

Other factors

On the other hand there are theories that dismiss aquatic plant allelopathy as reasons for plant loss. Within our planted aquarium, allelopathy may be ruled out due to the partial water changes we carry out, diluting any allelochemicals

being produced. The more common reason for plant loss would be the evasion from another plant specie. Plants that have the same requirements of light and nutrients, will undoubtedly out compete those a little slower in growth rate.

These two scientific theories' may or may not shed any light on the subject as to, why will that plant grow in one aquarium and not the other? Questions we may never find out the answers to.

Is it the work of allelopathy

For example, one of my aquariums contains *Larigosisiphon madagascarensis* and *Rotala rotundifolia*, the larigosisiphon is growing very fast and yet the rotala placed next to it has a much slower growth rate, and the size of the leaves are much smaller than that of the same *Rotala sp.* grown in other aquariums of mine. Now is this allelopathy at work here, or is it that the larigosisiphon is using up more nutrients and energy within this small area of the aquarium?

Well hopefully one day there will be an off the shelf guide as to the synergistic (co-operative growth of plants) lifestyles of our aquatic plants. Until that day comes, it will leave many of us frustrated in our efforts to grow that certain specie. [4]



Almost game over as space and light is becoming sparse, and the battle is almost won

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ABOUT US

What's your favourite article in this issue?

Least favourite?



Galway Atlantaquaria

Whilst visiting the breathtaking coastline of Galway Bay, *Tropical Fish* took the opportunity to visit the national aquarium of Ireland

Galway Atlantaquaria is situated on the famous Salthill promenade, and was opened in December 1999.

It has since evolved to become undoubtedly, one of the finest visitor attractions in Ireland, being the largest aquarium in the country and home to a huge variety of native freshwater and marine life.

Things to see and do

The National Aquarium boasts a high quality gift shop, café, and evening restaurant, as well as containing 170 species of fish and invertebrates, built over two floors. This includes four types of native Irish shark, including the rare Angel shark and venomous Spurdog. Also on display are seahorses - Irish born and bred, an octopus so intelligent it can open coffee jars, and over 20 of the most friendly predators in the sea - rays: and you won't have to wait long to get the chance to stroke one of these affectionate members of the shark family! As you can see from the picture on page 65, we didn't have to wait long at all for a meeting with these friendly little rays.

The Staff

The aquarium is staffed by expert friendly aquarists, who are on hand to answer questions, show you the animals close up, or even conduct a free guided tour if you wish. Visitors can explore the model submarine, marvel at the 60 foot Fin Whale skeleton, hold starfish and giant spider crabs, and much more.

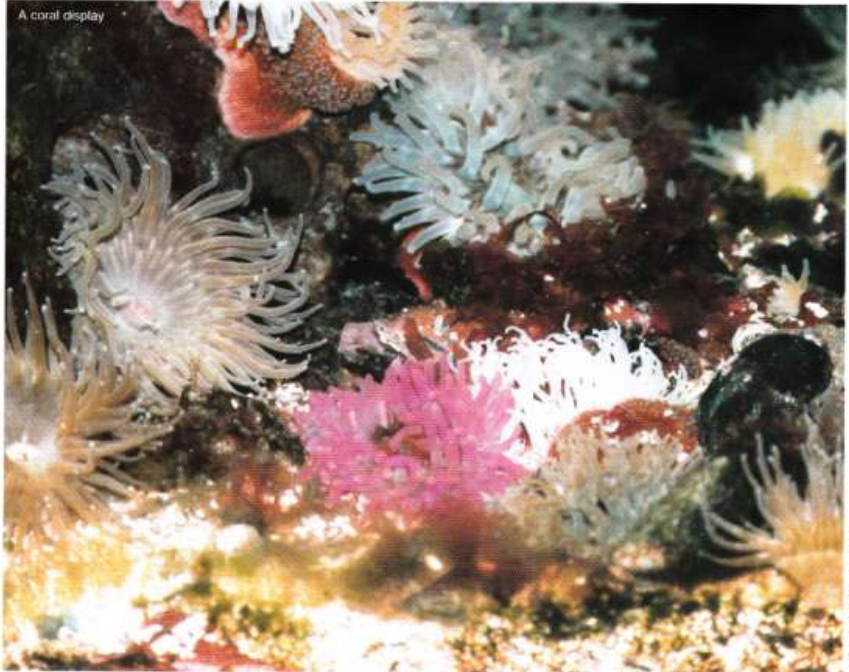
A surprise entrance

On entering the aquarium you are greeted with an amazing tank full of Sea bass, but be prepared because every 40 seconds a big wave splashes down into the tank to create a natural environment for the fish, and if you're not prepared for it - as I wasn't - it

A marine display with a large variety of different creatures and coral



A coral display



All Photos by the author



How cute are we?

WELCOME ALL!

Galway Atlantaquaria have translations sheets of the fish names and key phrases in 11 languages: French, German, Italian, Spanish, Portuguese, Swedish, Danish, Norwegian, Dutch, Irish and Scientific. So, wherever you come from, and however basic or in-depth your interest/knowledge is in fish, there is something for everyone.

Something for the kids

There is also plenty to keep the children entertained, including a kids room where they can watch a video and paint pictures to be displayed. There is also a small replica submarine (which I just about fitted into), where you can view the rays from beneath. It's quite a realistic experience, as when you are looking out of the windows at all angles, with marine life surrounding you, you could really be under the sea!

Breeding programmes

I always feel that it is important for public aquaria to participate in any



The rays are very tame and will allow visitors to touch them

THE AQUARIUM IS STAFFED BY EXPERT FRIENDLY AQUARISTS, WHO ARE ON HAND TO ANSWER QUESTIONS

can give you quite a fright!

The aquarium has a very relaxed feel to it and when I was wandering around, it felt peaceful and tranquil. The fish all seemed exceptionally well cared for, and it was great to see the staff being very hands on.

way possible to breeding programmes, protecting any endangered or threatened species in our waters, and I was pleased to see the Galway Atlantaquaria running a programme breeding the seahorse species, *Hippocampus whitei*. At the ▶



This tank contains 15 Spined sticklebacks and you can see a Greater pipefish lurking at the bottom of this picture

Show Report



The calming seahorse hangs on by wrapping his tail around the net

moment they have about 50 juveniles which they are attempting to grow through to adults.

Value for money

The great thing about visiting the aquarium at Galway, is not only is it situated in what I think is one of the most beautiful parts of Ireland I have visited, but the tickets are valid all day, allowing visitors to come and go. So, if you visit in the morning and you decide to take time out and have lunch, or visit Galway town centre, you can return in the afternoon to take part in the daily 'feeding frenzy'.

CONTACT DETAILS

Group discount of 10% and guided tours available free of charge on request. Disabled access, toilets and baby changing facilities. Tel: 091 585100 Fax: 091 584360 E-mail: atlantaquaria@eircom.net Open seven days from 10am to 6pm.



Some of the open topped display tanks



The rays share their tank with some small reef sharks



A staff member feeds one of the small sharks in the ray pool

BOOKS & VIDEOS PAGE

Stock Code	Description	Price
80000	Understanding Coldwater Fish	£8.00
80002	Creating a Natural Aquarium	£8.00
80003	Bumper Guide to Tropical Cichlids	£11.00
80004	Bumper Guide to Tropical Aquarium Fishes	£11.00
80005	The Q & A Manual of The Trop. Freshwater Aqua	£16.00
80007	Interpet Guide to The Healthy Aquarius	£6.50
80008	Interpet Guide to Fish Breeding	£6.50
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80010	A Fishkeepers Guide to Aquarium Plant	£6.50
80011	Interpet Guide to The Tropical Aquarium	£6.50
80012	Interpet Guide to Marine Fishes	£6.50
80013	Interpet Guide to Community Fishes	£6.50
80014	Interpet Encyclopedia of The Marine Aquarium	£19.00
80017	Practical Guide to setting up your Coldwater Aquarium	£6.00
80022	Dictionary of Aquarium Terms	£9.00
80023	Aquarium Fish-Family Pet Series	£9.00
80024	Interpet Manual of Fish Health	£16.00
80025	Labyrinth Fish	£13.00
80026	The Manual of Marine Invertebrates	£17.50
80027	The Book of the Marine Aquarium	£31.00
80028	Tropical Fish	£6.00
80029	Guppies, Mollies, Platys	£6.00
80030	Clownfishes and Sea Anemones	£6.00
80031	Piranhas	£6.00
80032	Aquarium Plants Manual	£6.00
80033	Cichlids	£6.00
80034	Aquarium Fish Breeding	£8.00
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80037	Lake Tanganyikan Cichlids	£6.00
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80039	Setting up an Aquarium	£6.00
80040	Your First Marine Aquarium	£6.00
80041	The Saltwater Aquarium Handbook	£8.00
80042	Native Fishes for the Home Aquarium	£7.00
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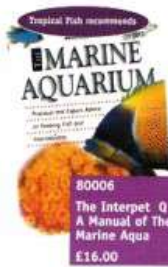
Tropical Fish recommends
80015
The Interpet Encyclopedia of Freshwater Tropical Aquarium Fishes
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Understanding Tropical Fish
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Aquarium Fish - Barron Guide
£10.00



Tropical Fish recommends
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How would you like your child?

If you're in charge of the young readers' page, probably fried or boiled, says Nick Fletcher

Never work with children or animals. No wonder Blue Peter presenters go loopy, because that's exactly what they have to do. If they're not worrying about whether or not the ruddy tortoise will wake up each spring (or pretending to care), they're compromising their dignity just to keep the ratings up. "I don't want to say 'yo dudes!' I never talk like that, actually." But that's what the kids out there expect. "Get a few festering piercings while you're at it, and don't smile at the camera, scowl. Oh, and by the way, next week you're abseiling off the tallest building in Canary Wharf."

The poisoned chalice

Life isn't quite that awful on hobby magazines, but there, the worst job in the world is looking after the junior page. It's a real poisoned chalice. For a start, it's always dumped on the newest, most wet-behind-the-ears staff recruit, when what it really requires is a cynical, hard-bitten old hack who knows only too well how awful kids can be, and preferably has a healthy dislike of anyone under 30.

Being made junior page editor when you've only just battled through puberty can scar you for life, and I don't mean acne. It may be the trauma of being dubbed 'Auntie Trudy' when you're really a six-foot Hell's Angel called Cruncher. It may be taking irate calls from parents because you've missed little Trevor off your list of birthday greetings. Or it may be the hassle of placating your page sponsors (major food manufactures, usually) because you've published a picture of a smiling tot with a tankful of tropics, beside which is clearly visible a pot of the competitors' fish flakes.

Worse still, I recall the seriously ferocious dragon lady on a title where I once worked, who remained stuck in the time-warp of editorial rugrat-minder well into her 60s. She scared everyone rigid,

so that when the office went open-plan, nobody dared tell her, and she kept her own little cubby hole - until, like Elvis, she finally left the building. And you think David Brent's antics are exaggerated?

Child use and abuse

I shouldn't really be complaining, of course, because all the wee wains who become members of the Pete the Piranha clan are aquatic geniuses. How else would a six-year-old manage to run a 1,000-litre marine reef system, or be an expert on the line-breeding of discus? Think of all the self-sacrifice that involves - up at five every morning to do a paper round, no Play Stations for Christmas, every spare second spent earning cash to pay for calcium reactors or live bloodworm. Or, of course, it could just be that the parents are using their tinies as a front for their own obsessions, and that in reality the only fish their offspring ever encounter, or want to, are deep-fried in breadcrumbs.

Little pickers

That aside, there are some genuine fish keepers of small stature who know more about their hobby than the grown-ups will ever forget. Your editor *Maria (who, judging from her photo in the magazine, is herself only just old enough to vote...) will back me up when I say that the most vociferous critics and pickers-up on the small mistakes that creep into any magazine, are the youngsters. And their emails and letters of complaint are so old-fashioned in their outrage, reeking as they do of offended sensibilities:

"Dear editor, I am 12 and was most distressed and disappointed when I saw the mis-spelling of the scientific name of the Lampeye *Aplocheilichthys vitschumbaensis* in your February issue..." At club level, it's the young fish keepers who always seem to win the monthly quiz (hurriedly thrown together when the guest speaker has been unavoidably delayed somewhere sunny and far, far away). They scoop the table shows with their immaculate, well-grown

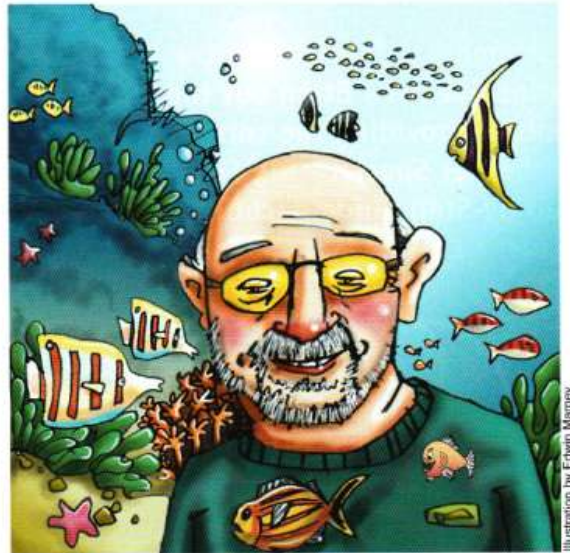


Illustration by Edwin Marney

WHAT IT REALLY REQUIRES IS A CYNICAL, HARD-BITTEN OLD HACK WHO KNOWS ONLY TOO WELL HOW AWFUL KIDS CAN BE

fish, ask the most awkward questions, and grow up, well... strange. You feel like telling them to go and hang around shopping precincts like any normal Chavlet, or twok the odd car, but no, their minds are wonderfully concentrated on the life-cycle of the whitespot parasite.

It's a fix!

The worst task that befalls anyone in charge of the kiddies' page on a fish keeping mag is judging the painting contests. Why run them in the first place? Well, it's a great way to fill up space, but for every picture you fail to publish, you risk losing a dozen readers for life. That's the mini Michaelangelo's parents, plus Auntie Vi and Uncle Joe, adoring Grans and Grandads, the school art teacher... they'll all hate you and cry 'fix'.

The paintings submitted fall into three main categories. There are those far too good ever to have been done by an eight-year-old (yes, it's back to those pushy parents). There are those shamelessly copied from the

pages of Aqualog. And there are the ones that actually make it into print, surreal rainbow daubs purporting to be of Polly the polypterus or George the guppy. I mean, what are these kids on? I'm well aware that *Tropical Fish* doesn't actually have a kids' page, and for that I'm truly thankful. Seriously, such things are relics of a bygone era when children were patronised to hell and treated as a separate species.

Marsh but fair

What they really need is a hard grounding in the facts of fish keeping life. Like, if you don't do as many water changes as you should, your fish will die, and if you try and mix oscars with neons there'll be tears at bedtime. They can find that sort of stuff, and more, right through this magazine, without the help of an Auntie Trudy - or a Wicked Uncle Nick, come to that...

Thanks for the kind comments on my youthful looks Nick - and yes I do agree with you, children are the worst critics!* **EF

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4112 RED WATER ROSE	0.50	2.25	1.80	1.80	4113 HETERANATHERA ZOSTEROPOLIA SEAGRASS	2.00	9.00
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4115 NESEA CRASSICAUDATA	0.35	1.50	1.00	2.00	4116 LINDNPHILA SESSIFLORA	3.75	17.50
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4150 STRAIGHT VALLISNERIA	1.00	4.50	2.50	11.20	4151 GIANT STRAIGHT VALLIS TALL	2.50	11.20
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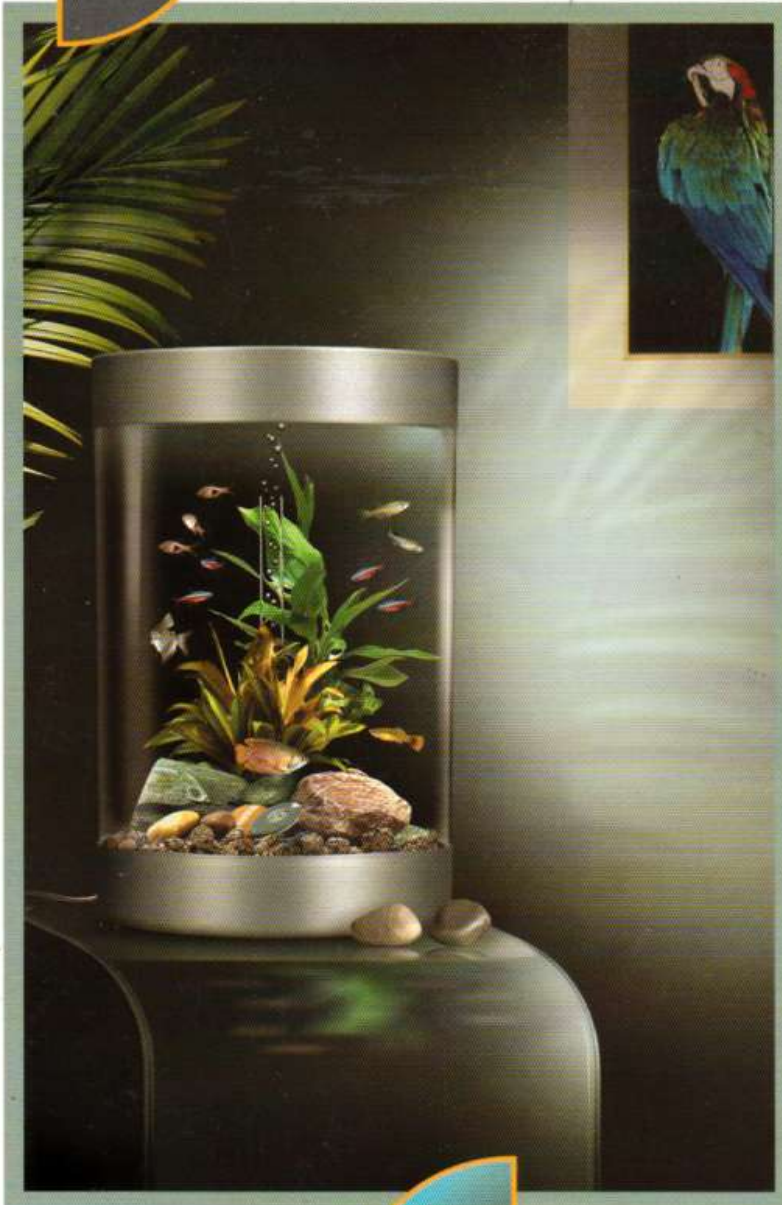
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