

Britain's best-selling
fishkeeping magazine

practical fishkeeping

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Where life begins

How fry develop and grow

Feeding finicky marines

Buyer's guide

to aquarium
cabinets

Plant filters
for ponds

Eye spy...

...freshwater eels; Blue acara; hiefish;
wycii catfish; mandarins; pencilfish;
Ember tetras; tangs; new fish in the shops



22 **PLANTING** **PLANTS**34 **YUKONIAN** **FOR** **WATER**48 **WATER** **FOR** **WATER**58 **THE** **WATER** **FOR**66 **THE** **WATER** **FOR**88 **THE** **WATER** **FOR**

THE FISHKEEPING EYE
 The Fishkeeping Eye is a monthly magazine that provides a wealth of information for the fishkeeper. It covers a wide range of topics, from the latest in fishkeeping to the history of the hobby. The magazine is published by the National Aquarists Club and is available to members and non-members alike. It is a must-read for anyone interested in the world of fishkeeping.

NET TROUBLE DAGES

24 **NET** **TRAP** **PROBLEMS**
 The hot weather can make taking net traps with fish a little tricky. Learn to avoid the common problems.

58 THE WATER FOR

58 **THE** **WATER** **FOR** **WATER**
 A short, peaceful, peaceful and easy to read. You can't go wrong with the available, says JO N. ROBERTSON.

Snidewater and ponds

60 SUMMER FISH PROBLEMS

The hot weather can make taking net traps with fish a little tricky. Learn to avoid the common problems.

66 THE GREAT FISH PLANTS

Learn to give your pond the most of what? Part 2 can be a total of three fish, the other with suggestions.

100 THE VEGETABLE COURSE

VICK FLETCHER explains how vegetable filters can improve water quality in your pond. In some cases, the fish and plants could otherwise be provided.

108 NEWS

108 **MAKE** **THE** **CHANGE**

7 **THE** **WATER** **FOR** **WATER**
 The hot weather can make taking net traps with fish a little tricky. Learn to avoid the common problems.

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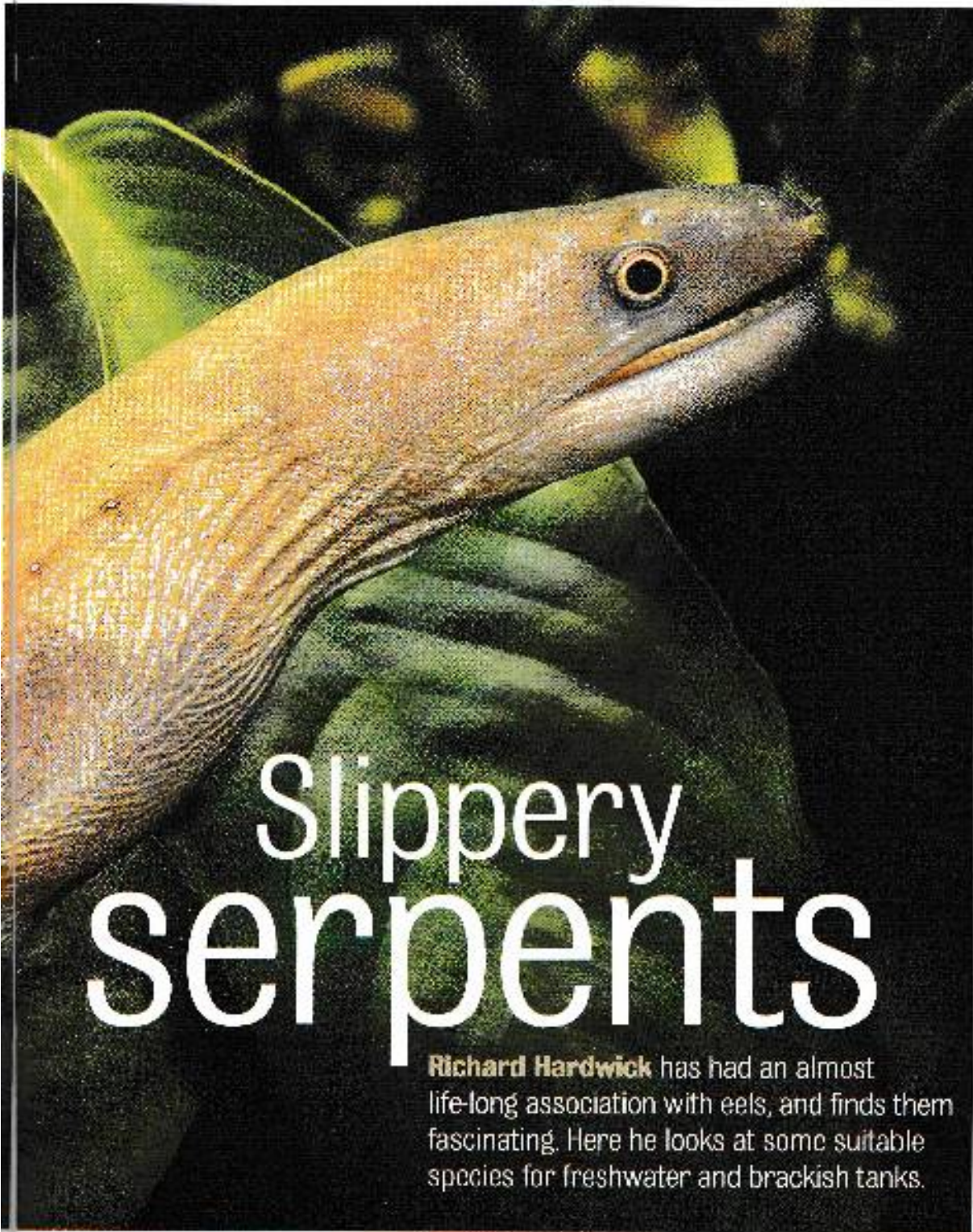
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Slippery serpents

Richard Hardwick has had an almost life-long association with eels, and finds them fascinating. Here he looks at some suitable species for freshwater and brackish tanks.



◀ **PREVIOUS PAGES:** *Gymnothorax* eels belong to the same family as marine Morays.

ABOVE: Fire eels can become hand tame and may take earthworms from your fingers.

RIGHT: Swamp eels are available only rarely.

So, what is the first thing that strikes your mind when you think of eels? Many of you will probably think something slippery and slimy, not to mention jelly! We always found eels to be fascinating creatures—right from the age of eight, the first babies of a few inches, known as chubs, and eventually giants of 760 x 30" plus.

I captured chubs on regular visits to the west coast of Scotland, at the mouths of rivers that emptied into the sea. One of the methods I used simple: I used to wait on a log, or when the river was no more than 45cm (18") at the edges, I'd lay out sunburn on my over-back as I removed huge boulders, going with anticipation into the water for basally anything that moved.

Some times as many as three or four 60-65cm (24-26") eels would swim around my bare ankles. Before I seized one with both hands and hauled it out onto the sandy bank, so I could observe it. This was the ultimate entertainment for me—

was never interested in the 'normal' things kids enjoy such as the beach and amusement arcades.

Incidentally, the eels I caught were *Zoarces anguilla*, better known as the European eel, or Eel, *Anguilla*. These medicinal creatures are found across the British Isles in lakes, ponds, canals and streams. Many become and breed and grow larger than those that make their way down rivers fighting against the elements to reproduce in the sea.

Eels can be kept in aquaria and tolerate a wide temperature range from extreme cold to quite warm (above 21°C/70°F). However, the tank should be no smaller than 120 x 60 x 45cm (48" x 24" x 18") with a good flow of heated, July, it with large boulders or smooth, 8mm gravel as a substrate.

Female eels grow substantially larger than males, often reaching 90cm (36") long, whereas most males are half this size. They'll eat many foods such as large earthworms, larval fish and oodles.

Fish usually get along OK with

their own kind as well as other suitable companions such as perch, chub, koi, etc.

Swamp eels

Now to winter climates to meet a novel creature known as the Swamp eel, family Synbranchidae, which comes from both America, Africa and Southeast Asia.

The only similarity these fish have with the true eels (the gill eel) is the word 'eel'. They are instead far more similar in design and habit to many longfish species.

The body is round and tapered with little more than a ridge along the back which also runs along the underside of the fish. There are no pectoral fins, and very gill openings give way to a very efficient secondary breathing organ not unlike the one found in walking catfishes of the family Clariidae.

The most commonly imported species, *Synbranchia orientalis*, these are found in Central and South America and are usually sold

Full circle

Full circle for eels: from their murky, lifeless bodies to the young eels that hatch and burst forth, wheeling in seawater circles. They're born in rivers, but spend their entire lives in the sea.

SOFT. The European eel subsists to the Sargasso sea to breed, so any you find near here will have swam from the other side of the world.

hanging, translucent. The eel's body does exactly what it says: it flows. The eel's head is just a long, thin, tapered tube, used to filter many things, but not that much in the eel's case.

The eel's body is covered in a thin, silvery, iridescent skin that is only visible when the eel is in the water. The eel's body is covered in a thin, silvery, iridescent skin that is only visible when the eel is in the water. The eel's body is covered in a thin, silvery, iridescent skin that is only visible when the eel is in the water.

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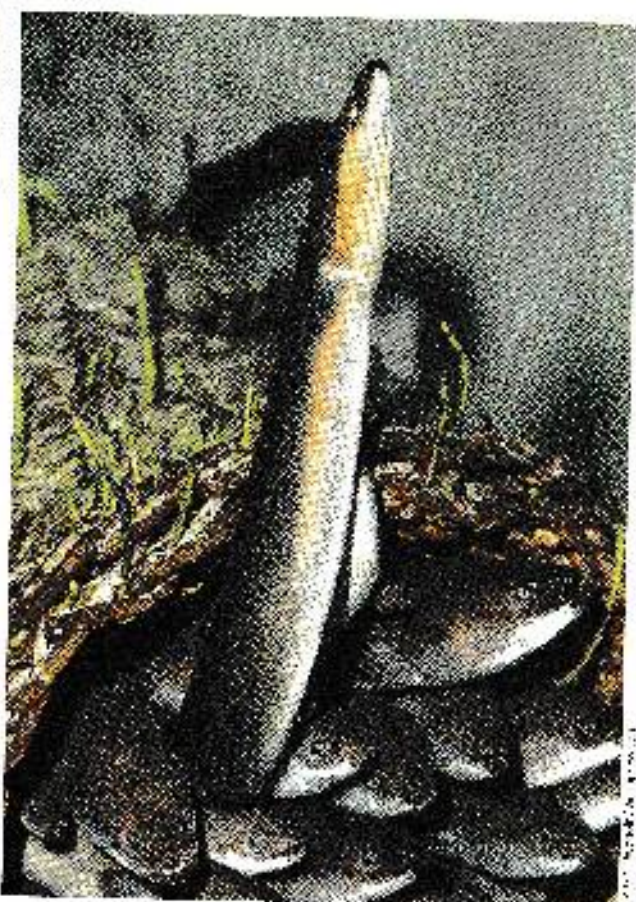
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make up an eel's entire life cycle, but also with other species of eels. A eel's body is covered in a thin, silvery, iridescent skin that is only visible when the eel is in the water.

'Freshwater' morgan

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News

The latest events in the fishkeeping world and dates for your diary.

On the PFK website this month...

Reader recommended
Reptiles
With a 10-page guide for 7 other articles, it was one of 2009's best. It's now back in print at a special price.

Article today
Reptiles
Discover how you can benefit from the release of the British Reptile Society's new 'Reptile Care' book. It covers all aspects of reptile care, from import to husbandry, and includes the latest information on the UK's reptile laws. It's the best guide available to help you care for your reptiles.

Shop directory
The PFK shop directory is the most comprehensive guide to the UK's fishkeeping community. It lists over 1000 shops, clubs and societies, and is available for free on the PFK website.

www.practicalfishkeeping.co.uk

EU legislation hampers coldwater imports

New legislation means that Jersey, Guernsey, the Channel Islands and the Isle of Man are no longer able to import coldwater ornamental fish species from Britain's wholesale markets. Aquatic retailers will have to get their stocks from certified SPC-free sources.

PFK warned that the new measures come into effect in May. However, some retailers only found out about this when they had to import fish stock but could not get the necessary fish movement documents, which allows the import of live fish. The document states that the fish are healthy and free from disease, and must be issued and signed by veterinary authorities.

The move is the result of a long drawn-out process of EU legislation. With the establishment of the single European market in 1992, an EU Fish Health Regime was set up to limit the spread of the most serious diseases across Europe

and to free up trade between member states.

SPC, or Spring Viraemia of Carp, is a notifiable disease and is causing among a grouping of diseases that are deemed to be a serious problem in some member states. The other diseases in the group include gonyadsis, yelp, Redhead, Kidney Disease (BKD), Furunculosis (Bacterial BKD), Infectious Renal Necrosis (IRN) in salmon, Koi Herpes Virus (KHV) is not a notifiable disease in the UK.

SPC affects ornamental goldfish, koi, rudd, tench, bream and wels. Symptoms may include enlarged, opaque, milky, two-eyed, deep red swelling of the abdominal region, coughing or the fish clear or pale faeces and a protruding anus, and bleeding from the skin or gills.

Following prolonged discussions, the concept of Approved Areas and Farms was introduced. These are so-called 'designated zones' which have been tested for and shown to be free of specified fish diseases.

At this time, Great Britain is an approved zone for Viral Haemorrhagic Septicemia (VHS) and Infectious Hematopoietic Necrosis (IHN).

The highest priority status is that of disease-free, followed by territories which have approved control and eradication programmes in place. Representatives from Jersey and the territories of Guernsey and the Channel Islands submitted evidence of freedom from SPC, and were accordingly granted disease-free status.

Great Britain, however, has only approved control and eradication programmes in place. What this means is that live fish can only be legally transferred between areas of equivalent status, or if the supplier has a better health status, but territories deemed as disease-free can only import from 'disease-free' territories. With this in mind, this includes Denmark, Finland and Sweden

which are not usual suppliers of coldwater fish to the UK.

Barry Evans, of St Peter's Garden Centre in Jersey, is extremely worried about the implications. A winter market peak sets for fall live goldfish, koi and shubunkin. He states that he will translate to thousands of euros in lost revenue.

With no imports on the horizon, he is now buying stock from local suppliers who have surplus fish in their ponds. The freight charges from disease-free zones are too high. This is worrying and stressful. There seems to be a lot of confusion – just what someone would call as 'what's going on', he said.

A number of retailers were written to the end of the year by using a 'designation of status' but have as yet had no reply.

David Murray, head of ornamental fish division, Delta, says that discussions were ongoing to consider whether any adjustments were needed to current programmes operating within the UK.

Fish fact: The Chain loach, *Botia sidthimunki* has recently

Sparsholt gets new aquatic centre

The best and some of the prestigious marine skills management courses at Sparsholt College, Ipswich, are now enjoying improved, better-equipped surroundings thanks to the opening of a new Marine Activities Training Centre (MATC).

The new building, which covers an 18500sq m site, has replaced the old one, which was a small space in which the vast, well-known courses (PSC's Technika, EdurMat, Skills and more) have found themselves cramped. MATC, which was completed in a matter of three weeks, is a tribute to the local Kall Trowers, who were in charge of the Marine Activities Training Centre. It is a well-built, but not too ornate, simple and modern affair.

With a main main section, with one off-gate, the ornamental fish course and the one dedicated to carp, koi and Goro coffin farming. There's also a small 1000-gal. Koi pond and a tank for huge tanks and a variety of marine systems to give the student a better feel

for up to working in the main industry.

Simon Jones, the head of Ipswich's Revised Department, enthused that the centre had been very successful. "On the commercial side, we've had fantastic help from Tetra Aquaria and from the Marine Activities Unit of Aqua Leader Group, Capdon 150, Octo and others."

As well as making the work inside, including the design and installation of all of the systems, has been undertaken by the students themselves. Although you'd never guess it, looking at the quality of the work is a bit of an extremely professional.

Any air in the air, Craig Brown told PTK, "I'm many students have taken on a challenging project. Two of the girls are leading a marine system with a 1000-gal. tank. We designed it as a case and the girls put it together with the aid of Graham Cook from Octo and others."

"It's a bit like a system it's fantastic. A student experience in their life just isn't just a job."

At the time of the visit, the new centre is a tribute to the students' hard work.



pipework and installing anything from a basic aquaria system to a Waterhead Aquaria controlled systems and even ponds and reef tanks.

The students were all very enthusiastic about the course and the facilities. They were returning from being allowed to work on the project, then some.

The courses are very attractive, but there's a very much hands-on side to them. All of the students spend three to four placements working within the industry, with some going as far as working in a Marine plant. Many placements lead to jobs with that company when the student leaves the course, and the students who complete upon graduation are exceptional. Quite a few students also continue onto Sparsholt's degree course, or go off to other universities to continue in a particular area.

Second year National Diploma student Ben Overhead told us: "I went to the Seattle Centre in Olympia for my placement. It was really good because they gave us the opportunity to work with their team, and we were able to help by giving something back

to them. We also worked on their octopus system, placed some graphs on their water quality, and gave them some suggestions on how they could improve the conditions."

London, will now train even on a SCUBA course as part of his studies, and has even started a display to see the water quality in his tank.

Ben, Matt and I did his placement at Brighton Water Centre. It was brilliant. They were the Grand old ladies there and I'll be sure to tell them that to face them and you'll still be public about them, just."

Sparsholt's courses are highly respected by the trade and many students have gone on to gain senior positions in the industry. The college is a Centre of Excellence and is a Level 1 OFSTED approved institution. Two new buildings, very well loved.

If you're considering a career in the industry, we recommend a Sparsholt education. Not only do the courses give you the knowledge you'll need to work in the industry, they're also great fun.

For more details, visit www.sparsholt.ac.uk, call Craig Rowan on 01462 776711 or email carl@www.sparsholt.ac.uk.



Ben Overhead Yasuhiko Takai sithimunki



The people's poll

Do you lose interest in your aquarium in summer?

Does your garden and/or other summer pursuits distract you from your tank? Do you then end up spending less time and money on your aquarium?

For nearly a year, people in the aquatic trade have said that the fish-keeping hobby is a very seasonal affair. So they say, how busy are you in your hobby during the colder months, and how busy are you during the warmer months? Of course, one will always find change in the hobby, but the year-to-year variation is so great that you can tell when you are in the middle of winter.

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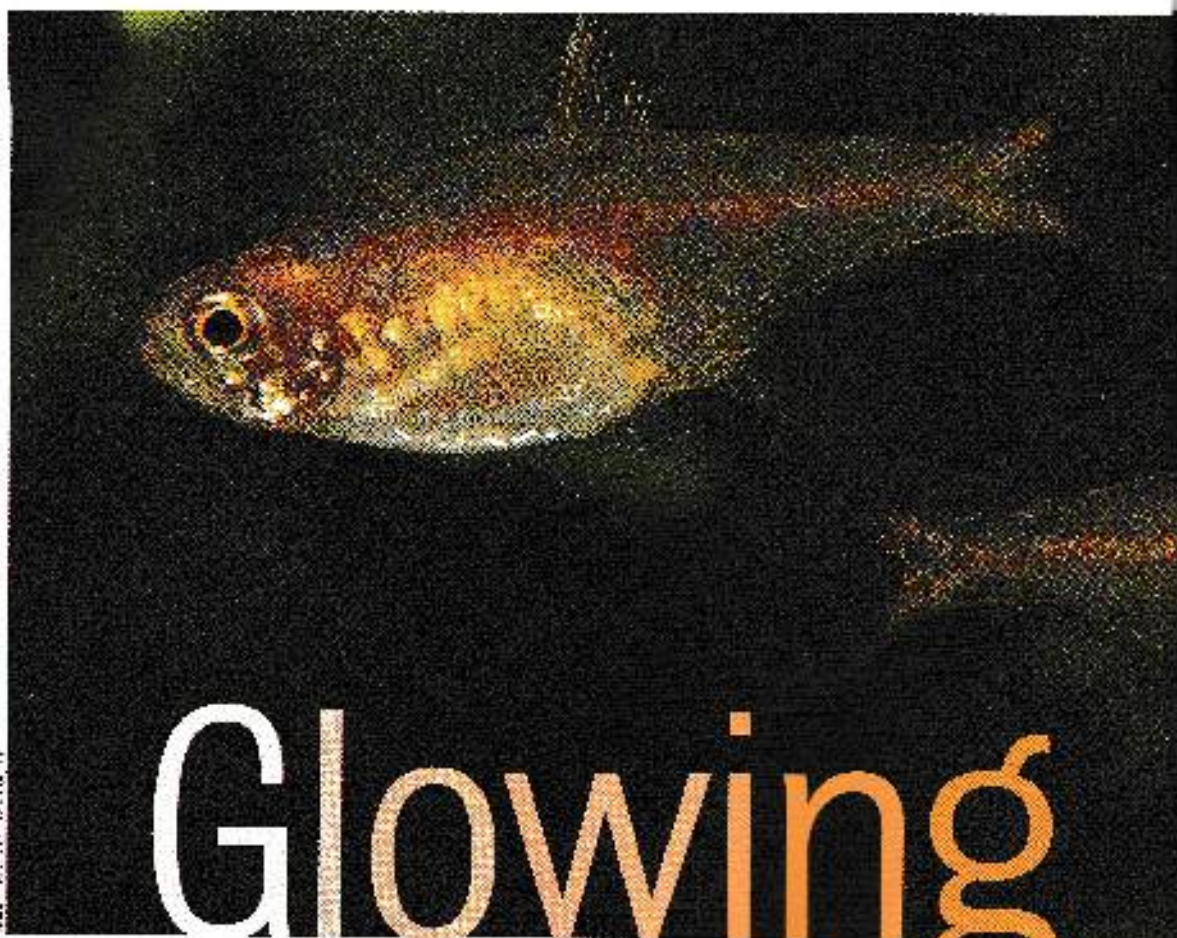


Do you lose interest in your aquarium in summer? Yes 23%, No 77%, Maybe 11%. For some people, the weather is a great reason for a month or more of inactivity. It's just a matter of time before you are in the middle of winter.

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www.practicalfishkeeping.co.uk/the-peoples-poll



COURTESY OF JOHN RUNDLE

Glowing

They are really tiny and a challenge to breed, but the Ember tetra is a real treat, says **John Rundle**.

ABOVE: The Ember tetra is quite partial to live food.

The Ember tetra is one of the smallest tetras around, and usually stays within a 3-inch adult length. Jacques Géry and André J. Cassinelli first collected it in 1947 from specimens collected by Heiko Bleher in 1950. They were found in the Rio Verde area, near a small tributary of the Rio Negro. Heiko Bleher, *Apistogramma* aficionado, is a member of the interested in and knowledge of the freshwater fauna and flora of Brazil.

Of all the fish in the genus *Apocheilichthys*, only a few, such as *A. trilineatus*, *A. elongatus*, *A. caudimaculatus* and *A. lineatus*, reach a length of 2 1/2" (6.35 cm).

In the wild, these fish are found

in the soft water that is on the acidic side. In the aquarium, they are seen at their best if these conditions can be replicated.

The tiny fish are used for the starter tank set up with other small tetras. Yet the tiny fish with plenty of just cover, but also a good front swimming area. Yet the temperature between 24°C and 28°C (75-82°F).

While they will readily take dry food, the Ember tetra loves the addition of live foods for an extra touch. Take them slowly to avoid becoming ravenous.

How to breed the tetra

The Ember tetra at times shows just a hint of blue colour, while at other

times it has a beautiful orange glow. I've even seen them feeding live brine shrimp called *Artemia* if it is orange body colour.

Spawning is a matter of the males are quite strict in shape while the females when in breeding condition are very robust in the belly region.

I kept this fish in 1982, but did not have any success in breeding it then. One diet of live food and live foods such as brine shrimp, Grindworm and white worms. I was soon able to see female fish were in breeding condition - they had very plump belly areas.

In setting up a breeding tank, the only tank I had was a 10 litre of my 40 litre tank. 40 x 20 x 20 mm

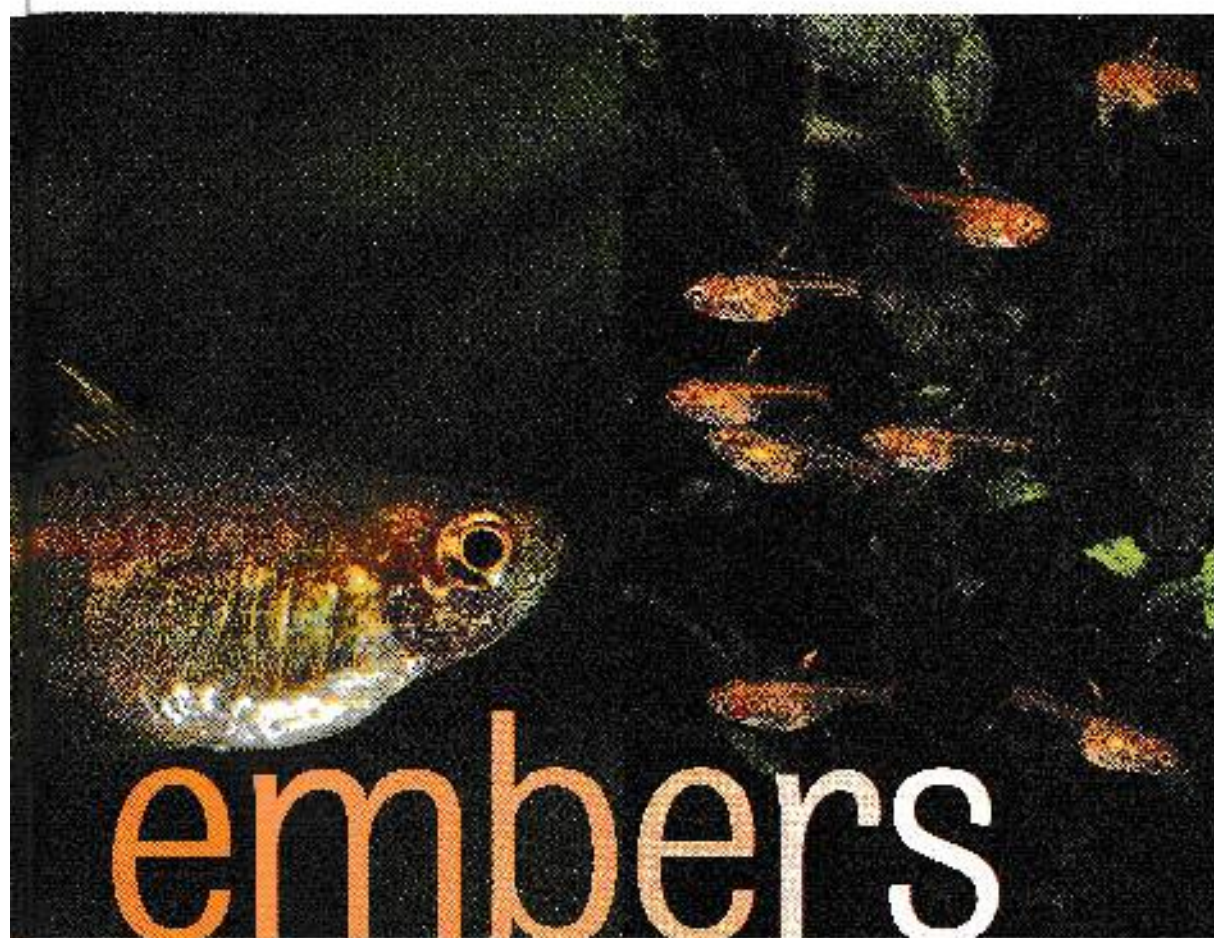


Photo: Chris Cooper/istock.com

12" x 8" x 6"). This tank would normally hold one half to six fish, and as I had been advised in such a small tank I guess I'd have no trouble with a small pair of goldfish was only 2cm long.

The Ember tetra rarely breeds under the water in my tank and so I used my usual transfer of dirt and wood, very soft, and I never got it.

As is the norm with me, I kept the tank bare, if only had a heater set to 25°C/77°F, a small aeration filter and two small swimming maps, one on the base of the tank, one suspended on the front polycarbonate.

The tank was initially set for the first six days before adding the new pair. A competitor showed a pair of E.4. I covered the tank with newspaper to prevent the fish in a very subdued light.

With the tank covered, I was not able to witness any direct breeding behaviour, but when I looked under

the cover, the male was chasing the female around the female.

It was on the second day that I realised that the fish had spawned. Lifting the newspaper, I could see that the female was definitely laying eggs, outside the spawning map on the base of the tank, I could see a couple of eggs.

These were about the size of an average larger fish from the genus *Gyrodactylus*, approximately 1mm. Assuming there were more eggs in the tank, I set over the pair.

After 24 hours the eggs had hatched. The newspaper was still kept in place to keep the yolk for larvae in subdued light.

After separation of breeding after 24 hours the female was set over these would be the swimming within three to five days.

After three days, I removed the parents to see if they were any successful in the

Feeding tiny newbies

Like all egg layers of this type, no food was offered until they are free swimming. As the first food must be very small in size, I fed the fry my own cultured infusoria.

With a volume of the amount I needed in as I had such a small number of fry, I fed them just 20ml of infusoria water, which was used for four days when they started to take to it (see my 2007 article, a brood of Glowlight was of about 200, I would get about 2000!).

On a day of being a feeding tank, in my room and old fire powered the lights, they were so brightly white to see in. I then added washed raw foods to their diet.

At this time of writing, I have 16 young in the brood tank, they are swimming in a school, and with a good and if you can breed this, it's a really good idea to breed them, the area of achievement is great.

Author's Bio:
Chris Cooper is a professional aquarist with over 20 years experience in the hobby. He has written several books on fish care and is a regular contributor to various aquarium magazines. He is currently working on a new book on fish breeding.

Make the change!

Paul Stewart answers the common questions asked when moving from a fish-only aquarium to a reef system.

In the article we looked at how coping invertebrates and reef corals differ from keeping a fish-only tank, and how these differences need to be taken into account when changing from one type of tank to the other. In this concluding part, we'll look at the practical aspects of making the change.

Can I use my old tank and equipment?

Yes. Although you may need to add some equipment to change the way you set up your existing gear. However, tanks, power heads and so on, and furniture can all be re-used in reef tanks. Even if your old tank has been treated with copper-based medication, your substrate will be safe if it is cleaned thoroughly.

Plants and grasses can be as safe as corals, but be careful so there is no significant risk of having any copper-based medication leeches. Copper can be a deadly compound.

However, if your equipment has any plastic or cellulose glue, be careful adding to it, this should be removed. This is easily done by soaking the equipment in either vinegar or denatured alcohol, followed by very thorough rinsing.

Can I re-use my existing tank decor?

In many, to preserve glass equipment, a ceramic tank decor within an invertebrate tank, used for skeletons, tide rock, ocean rock, living rock and any other type of fish ornaments, avoid significant quantities of copper if the tank is treated with copper-based medications. There is a tank that the copper can then leech out into the water.

Obviously this is not a good idea, but to have in a tank with invertebrates. Any of these items are probably fine to be discarded if they have been exposed to copper.

If you wish to reuse exposed rock and sand, you might want to think about the material you are using. If you have a your new reef tank, the soft, chunky surface of this material is more likely to be a better choice, which is not a big deal in a heavily system, but can cause a problem in reef aquariums. Also, making a gap for it difficult to colonise, unless they prefer harder surfaces.

A lot of invertebrates like to burrow. This applies particularly to sand, which can trap high quantities of detritus and needs a lot of washing. Surfaces of rock should be scrubbed to remove detritus and algae. Any living rock should be too dirty and may only need a light rinse if it is used as a tank divider or a substrate layer.



SHAWN FROST are beautiful and lower fish and other invertebrates.



SHAWN FROST

What are the best corals to start with?

When you first keep corals, the best to start with are those that are easy to care and tolerate a wide range of parameters, for example with lighting a standard system is unlikely to be equipped with high wattage metal halide. Most people going to reef tanks can't stand that sort of investment and they are sure that they are going to get seriously into keeping reef tanks. So initially stick with easy to maintain and need high light levels.

Normally, if you master the techniques of managing invertebrates in reef tanks, it's best to avoid fast-growing stony corals.

The same applies to water quality. Water flow and carbon dioxide input to reef tanks you need to consider will be where a lot of stony corals will find conditions, for example, more complex of these.

Mushroom anemones

Mushroom anemones (*Alcyonacea*, *Alcyonacea*) are a group of invertebrates that are all in the same group and are often used as a good first step to keep. They are a lot of a variety of colors (from green and brown to red, purple and blue), textures (from a 'fuzzy' or 'furry' pattern to thin, sheet, spotted, mottled and so on). They are so particular



amounting of light, water quality or water movement, and do better when they are not exposed to very strong currents.

Avoid the large 'elephant ear' mushroom anemone, *Amplexosorus leucostriatus*, if you keep small fish, as they may eat them!

Leather corals

Leather corals, *Sarcophyton* spp., have a long established reputation among the families of soft coral species. They are also very attractive, hardy species, and can grow very large (ideal if you want a big centerpiece for your reef system).

Leather corals are one of the least hardy coral species, but they do appreciate good water movement. In addition to the mushroom-shaped leather corals, interesting types such as *Sarcophyton* and *Lobophytum* species are also good corals for the newworker and require similar conditions to *Sarcophyton* leather corals.

Zoanthids

Zoanthid polyps (*Zoanthus*, *Avicula*, *Leptozoa*, *Favosites* and *Anthracopora* species) form beautiful colonies (see sheets of information on anemones). Colours range from brown to red, bright

green, turquoise, yellow and orange. Zoanthids form extensive colonies, encrusting, and requiring roots.

Their demands are for bright light, and also for water movement, and, particularly with the smaller species, their algae should be kept under control as it can easily overgrow them.

Branching soft corals

There are a lot of branching, tree-like soft corals, mainly *Acropora*, *Dianthus* and *Stylophora* species, but do very well in the aquarium, needing only moderately intense light and steady water flow to thrive. Most of these corals are not spectacularly coloured - beige to brown is the usual colour range - but they grow fast, have interesting forms and their lack of rigid skeletons lets them move attractively with the currents. Unlike branching stony corals such as *Acropora*.

Star polyps

Star polyps (*Solenastrea* species) are slow growing, interesting soft corals that have brown or green tentacles surrounding a very smooth, light-colored oral disc. Green specimens fluoresce brightly under actinic lights.

Star polyps are tolerant of a wide range of conditions but do best under reasonable bright light and moderately strong currents. Under these conditions they spread rapidly, smothering any available substrate (including aquarium glass) and form large, spectacular colonies.

The only potential problem likely to be encountered is substrate algae growth; here, as they are so unobtrusive, star polyps can easily get overgrown.

Large polyp stony corals

It may seem surprising to recommend stony corals to people embarking on their first reef tanks, but there are a few species that are very straightforward to keep. These are primarily free-living species that are often found in shallow waters such as in sandy lagoons, and which even in the wild tolerate slightly higher levels of organic pollutants and cooler currents than would be the case for reef-building corals such as *Acropora*.

Not all models of the type are easy

ABOVE LEFT:

Shrimps are a good choice for the beginner to invertebrates, but they must be acclimatised carefully after purchase.

RIGHT: Feather dusters do best in moderate currents.



It's a fish's life

The pace of change as a fish develops from a mere sparkle in its parents' eyes to 'Junior' is an incredible journey. Dr **Ashley Ward** navigates the waters...



As all fishes we are familiar with the idea of fertilisation is new to us in our aquaria and watching them grow the fleshy. Many of us have gone one step further, breeding our own fish and watching the fleshy turn from a yellow stage, the fertilised egg, through the early stages of development, through to the young fish, which are now swimming with confidence.

There are a lot of remarkable stories of behavioural and anatomical changes. One of the most common

is that of the young fish, which are not only the process of development, from the newly fertilised egg to the young fish.

Fertilisation

So when exactly does life start for a fish? At fertilisation, the fertilised egg begins the process of development. At most points during the fertilisation and early stages of development, the young fish are not visible.

Many of the species produce eggs which contain an embryo in

the form of a small, dark, circular or oval shape. The majority of these eggs are produced by the female and slightly larger than the male's, which immediately sinks towards the vegetation at the bottom. One of the first things which is being undertaken, the embryo is beginning to develop inside the egg.

The fertilised egg grows out as a single cell and after a few days a small, but an incredible cocktail of chemicals, including proteins from within the embryo is available



constructed, yolk to nourish it, and a complete instruction kit (the genes) on how to assemble everything. As an analogy, the egg is an ingenious life-pack fish. But unlike flat-packed furniture, you can't assemble it at home; it doesn't hang around for weeks without assembling towards the final product.

The speed at which an egg develops is directly dependent on the temperature, a concept which fisheries managers sometimes refer to as the number of 'day degrees' needed for the egg to hatch. This simply means that if an egg will hatch after three days at a temperature of 10°C (50°F), it can be expressed as 75 'day degrees' ($3 \times 25^{\circ}\text{C}$). This usually means that if the temperature is corrected to 30°C (if it's egg will hatch more readily, namely 25 'day degrees' added by $30^{\circ}\text{C} = 21^{\circ}\text{C}$ days).

Time to hatch

It makes good sense for the embryo to develop rapidly as it's a temporary defence against its time in its life. Fish parents sometimes try to improve their offspring with the greatest chance of survival by spawning when the temperature rises to that the egg stage will be as short as possible.

Some marine species, such as Hawaiian demersal fish, coordinate their spawning to make sure that their offspring hatch at exactly the right time, allowing the newly hatched fish to acclimatise to their environment at the very of climate predators.

Each animal egg, like all other fish eggs, need a certain number of 'day degrees' to develop, the same as must be able to assess the water temperature accurately to within a single degree to 'know' exactly when to spawn.

In complete contrast, many tropical freshwater species spawn when the water temperature drops, coinciding with the spring melt, and the entry to the rivers of cold water from thawing snow and ice. Although it is unclear the eggs will take longer to hatch when they do, the spring floods yield plenty of food.

Being the 'apfish'

Most research on fish development has been carried out on the familiar occupant of the community tank, the zebra danio. This was chosen because it is, as we know, easy to breed and has transparent eggs, which means that we can watch the development.

Zebra danio eggs hatch after about three days, a fairly typical

period of time for freshwater tropical fish. The pace of change inside the egg is incredible. At fertilisation, the embryo is simply a single cell but within one hour, it has split into two and then four cells. These cells are eight and so on, about every 20 minutes to half an hour until just four hours after fertilisation, the embryo has around 2000 cells.

At this point, the embryo doesn't look much like a fish. The cells are concentrated and organised into one side of the egg, while the rest of the same is taken up by a large, clear, rounded blob. If you imagine the egg as the earth, the cells would take the place of the North Pole ice cap and the blastocyst represent the rest of the globe. The cells are what will become a young fish while the blob is the yolk sac. The packed cells are provided with a network.

The development of the embryo is cell-based and incessant. A thin layer of cells spreads from this North Pole and envelopes the yolk sac. While this is happening, the cells still at the North Pole gradually become more specialised and six hours after fertilisation, the embryo starts to look like a little maggot (not like a real fish, curled around its yolk sac). It is now that the cells start to differentiate and become specialised.

Up to this point, all the cells are identical copies, yet adult animals have a myriad of different types of cells: skin, stomach, heart, liver - which form the different structures of the body. The genes, which are the coded instructions for the body, control this cell determination. Certain genes now switch on inside certain cells and redirect their development. This is a one-way

At fertilisation, the embryo is simply a single cell but within one hour, it has split into two... until just four hours after fertilisation, the embryo has 2000 cells.

process, once a cell is instructed to differentiate and become a liver cell, then it, and all the cells which derive from it, will be liver cells.

A fish forms...

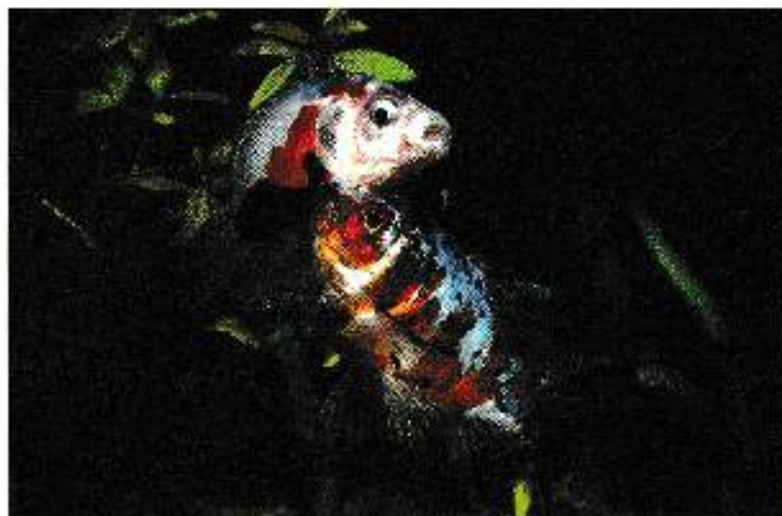
Gradually, the major organs start to form and muscle develops. A sheet of cells folds around to itself to form a tube along the full length of the embryo. This tube will later become the backbone of the animal.

Just 24 hours after it was no more than a single fertilised cell, the spinal cord, the heart and the beginnings of a brain can be seen. Another 24 hours and the embryo's mouth, fins and teeth and its heart can be seen pulsing, sending blood around the embryonic body.

One of the most obvious things about these embryos are the eyes. Relative to the size of the embryo, these are huge. This is partly due to the eye's plastic properties, but it is also vital for the embryo to begin hunting its own food, soon after hatching and for its eyes are already crucial. The yolk sac which plays such an important role in supporting the embryo is rapidly being used up and without this

LEFT: The pace of change from when an egg is laid until the fish is a fully formed youngster is incredibly fast.

RIGHT: Goldfish spawning.



THE GOLD FISH: SWIRE PHOTO

Which air freshener should I choose?

Q As I was changing the refill bottle on a plug-in air freshener, I noticed a warning that the product could have long-term detrimental effects on the health of tropical fish. Is there a brand that is fish-friendly?

IAN BRIGGS,
BRIMPTON

A That's a good question, and as someone who cannot stand the smell of air fresheners, I have never had to worry about fish in particular.

We know that certain household aerosols and other chemical products may be harmful to fish, though under most circumstances the risk is probably quite low.

I am not sure what the toxic ingredient might be, possibly the solvents used in many aerosols are the issue?

I suggest you examine several brands of plug-in refills and look for any warning signs on the packaging.

When you read a product label, please mention fish, a brand up the manufacturer to make doubly sure. If these fish assuming would not suffer from new fever would always opt for no scent and instead use an air freshener of all and open windows.

IAN BRIGGS

Cardinals edge it on colour

Q What is the difference between Cardinal and Neon tetras? Do they require the same conditions?

RICHARD SANDS,
HYDEHAM

A At first glance, colour appears to be the main

difference, with the striking blue and red very prominent on the Cardinal. On the Neon, the red extends only about halfway along the body and the blue has a uniserial line to it.

I have found that as the fish get older, the colours of the Cardinal tend to fade slightly whereas those of Neons weaken.

The Cardinal is 5cm/2" when fully grown, the Neon 4cm/1½".

Both fish are now in the

genus *Pomacentrus*, *P. cardinalis* and *P. nebulosus*.

Cardinals are widely distributed from the Orinoco in Venezuela and north and east tributaries of the Rio Negro in Brazil to western Colombia.

Neons come from the Rio Putumayo in Peru, but most of the fish we see in the shops are captive-bred in Hong Kong.

Both species do best in soft, and slightly acid, water.

JOHN RUNDLE



Cardinal tetras

New water butt is the prime suspect

Q Within 10 minutes of carrying out a water change from a new 136 l./30 gal. butt, all my fish were gasping at the surface. I immediately carried out another change, this time reverting to my old method, but 24 hours later the fish were infested with

whitespot (now, thankfully, cured). Could the butt have leaked toxins into the water, and could the whitespot have come in via the tap?

MARK BRINSON,
VIA EMAIL

A During my university studies, I used only food-grade plastic or polypropylene containers for fish to avoid problems with plasticisers and other leached substances. It is possible that all or most of the chemicals leaching from your water butt has

now occurred, such that it is now safe, but there is no way of knowing.

If you plan to use it again, to reuse it, but first with a bucket of hand-hot water, then a hot and boil.

Whitespot parasites must already have been present in your tank as they do not appear from nowhere and cannot come in with tapwater.

Sometimes, however, an infection is triggered by stress, and it is seems to be the likeliest explanation.

PETER BURGESS

YOUR TROPICAL EXPERTS

Do you have a question about the care of the tropical fish in your aquarium? Please send questions and practical fishkeeping queries to fishkeeping@uk.com and we'll forward your queries to our expert writers who will give you a practical answer for all your queries. To receive your copy, please send a self-addressed envelope to: fishkeeping@uk.com, PO Box 100, Weymouth, Dorset DT98 3DF. Please include a stamped self-addressed envelope for our queries to receive your copy.

PLANTS
FRANKIE
FRANKIE@UK.COM
A 20-year-old hobbyist with a passion for aquatic plants.

NEONS
PETER BURGESS
A 20-year-old hobbyist with a passion for tropical fish.

WHITESPOT
MARK BRINSON
A 20-year-old hobbyist with a passion for tropical fish.

WHITESPOT
JOHN RUNDLE
A 20-year-old hobbyist with a passion for tropical fish.

WHITESPOT
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WHITESPOT
JOHN RUNDLE
A 20-year-old hobbyist with a passion for tropical fish.



Spinal deformities can be genetic.

Don't let danio suffer too long

Q One of my Zebra danios, which I have had for about 10 months, has become increasingly bent. This spinal curvature is now affecting its swimming. What may have caused this?

HEATHER DENMAN,
LOS ANGELES

A The most common cause of spine

deformity in fish are trauma, myxomatous infection (flat on one side for hours) or congenital (you have two or three years on average) a functional problem, such as a lack of beneficial minerals in the diet or a developmental deformity, perhaps genetic.

It is hard to say when your fish is suffering, but he should swim nor-

mal. In most cases, if otherwise its tankmates would be showing similar symptoms, in any event, a bent spine is generally not a contagious condition.

There is little you can do to help other than feeding it in isolation with an appropriate remedy, but if its condition worsens, it would be kinder to have it put down. **—LEE BURGESS**

Flaky piranha need settling

Q Is it normal for Red-bellied piranha to swim really fast around the tank when they are scared?

DAVID GRIFFITHS,
VAN EMAN

A Yes, this is quite normal behavior, and all piranha species can be nervous in captivity. Rapid swimming can be greatly induced by using low-intensity lighting (up to 6000 lux) for 24 hours for a week.

These fish can tolerate some darkness after a week or so, once they get used to the new environment, but during this period, it helps to keep the lights off altogether. **—RICHARD HARRISON**

FACT FILE

Common name: Blue tetra
Scientific name: *Hyphessytrichus burtoni*
Origin: Colombia
Size: 2.5-3.5"
Blue tetra is similar to the tetras of the blue group, which swim in schools. **Aquarium:** 20-30 liters. The tetra is the most popular choice for swimming around and back in a tankmates. **Water:** Blue tetra is a soft water fish, but it tolerates a wide range of water hardness (10-200). Good water quality is particularly important with this species. **Notes:** The blue tetra is a peaceful, colorful fish with a sweet, pet-like character. It is an egg-eater.



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Ropfish is a real character

Q I have a spare 76 x 30 x 39cm/30" x 12" x 15" tank and would like to keep something that poses more of a challenge than the usual community tropicals, and has a personality. I don't mind if it's a pair or a singleton. Any suggestions?

T. PRAGASR, LEICESTER

A Quite a few dwarf snakehead species would provide you with good entertainment. One of the prettiest has to be the Rainbow snakehead, *Channa argus*. It will quickly learn to feed from your fingers, but beware, it can give quite a nip if the food is not released quickly enough. This species rarely grows



Ropfish grow to 45cm/18".

PHOTO: J. HARRIS

to more than 20cm/8".

Provide it with a variety of plant material. These fish take in air from the air and dissolved oxygen from the water, so good access to the surface is essential.

Another good choice would be the rope fish *Spinafys ruberatus* from Africa. These strain African fish, although they are very flexible despite having ganoid scales. One

would be in harmony with a Rainbow snakehead.

Tight-lipped looks may be fine, if you are to keep either of these species.

RICHARD HARDWICK



Water testing – is it essential?

Q I have a 120 x 30 x 45cm/48" x 12" x 18" tropical tank with an eclectic mix of fishes which all seem to get on well. Apart from when I first set it up, I have never tested for pH or hardness. I know PFK emphasises the importance of doing so, but is it really that important? I intend to make the change from plastic to real plants very soon.

CHRIS STANFORD, FOLKESTONE

A If you vary out let for water changes, then the pH and hardness of your water should remain fairly constant, especially if the mains supply is

quite hard and alkaline. This will buffer against pH changes, hence the reason many fishkeepers get away without water testing.

However, it's always useful to know roughly what these values are in your aquarium as they might influence your choice of fish or plants.

Regular testing can help spot a problem (such as sinking pH) before it gets serious enough to affect your fish. If your pH is very stable, adjust the timing of your tests to suit.

In most tanks, light deficiency is the main obstacle to growing real plants. You'll need at least two fluorescent tubes to

grow really good ones such as *Agnesi* spores and *Valisneria*, but *Java moss* and *Java fern* are still very forgiving as to their lighting requirements.

I would replace your artificial plants in stages, but don't be afraid to add plenty of live ones, or algae may reap the benefits of your lighting.

SEAN EVANS



Object lesson on the Oscar

About a year ago I acquired a large tank and installed two very small Tiger Oscars which are now about 15cm/6" long. I love them to bits, but know nothing about them. Pet shops in this part of Ireland cannot help, so any information would be much appreciated.

FINTAN KERNAN,
CORR CITY

Am I huge or is it that your shops don't know about Oscars as they are probably the wrong size and/or age class and have been around in the hobby for some 75 years.

Their scientific name is *Astronotus ocellatus*, and they come from the



Oscars can live 10 years or more.

Amazon basin in South America. In the wild they live in soft, acidic water (also called for breeding in captivity), but will live happily in any water chemistry.

The sexual dimorphism of the Oscar is pronounced, with red cells on the back. The Red Tiger is one of a number of variants which developed over the years. There are also Red Oscars, where the fins are entirely red, and various other patterned forms.

They grow to about 20cm/8", and are unisexual. Two females will live together as well as male and female, and may even stay together, but two males may fight.

When the size of juveniles is small, it is my guess that they are not born males.

Oscars cannot be trusted with smaller fish. If possible, feed live fish, prawns, shrimps and earthworms, but not too many pellets. It can be difficult to get them to

accept new foods if they are fed one 'favorite' another reason for a constant diet.

Oscars are prone to digging and moving anything possible. This can include heater pipes and filters, so make sure these are anchored or clamped in place.

Their destructive tendencies can be directed by giving them plastic plants and ping-pong balls to play with. They can live for 10 years or more.

YOUR CICHLID EXPERT

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Write only a check or money order payable to Tetra Ltd. Do not send cash. We'll send you a complimentary copy of the magazine if you're not already a subscriber.

FACT FILE



Common name: Don't let sweet talk fool you.

Scientific name:

Astronotus ocellatus

Size: Males to 7.5cm/3",

females to 8cm/3.15"

Distribution: South

Brazil, Paraguay and

extreme north of Argentina

Habitat: Small, shallow

ponds or streams in

savanna or savanna

with soft fern, broad water

and marginal on rain and

seasonal flooding

Aquarium: 60 x 30 x

30cm/24" x 12" x 12" for a

male pair, or can be kept

to a pair of one with

beginners for best in

a 60cm/24" or larger tank

Requires lots of warm

spots and good water

quality. They do lower

lighting moderate to avoid

other fish like smaller fish

Water parameters: Soft,

pH 6.5-7.5. Temperature

24-28°C/75-82°F. Water

for southern populations

Diet: Carnivorous. Favorite

invertebrates include

live or frozen larvae, but will

eat any red worms

Sexing: Males are much

larger and have curved

differently. Water can be

small - have an olive- or

yellow as opposed to

purple and will bleed

pellets.

Breeding: Each female

requires a tank of 50-

24cm/19" x 12" x 12" and

one or two small

plastic plants. Use a

drainage trap with a

filter. If the pair are

aggressive, try to

keep them apart.

Similar species: Other

species with a rounded

head will be confused

with it.

Notes: Although this fish

can be kept in home

aquaria, it is regularly

being reported participating

in blood drive. Also

suggests a tendency

towards tail formation.

Despite this, it is the

longest-lived of the

species and doesn't

have a

Tetra

DISCUS: LETTER OF THE MONTH



Tetra Discus Extract is a water treatment product for discus fish. It contains a blend of natural and synthetic ingredients that help to improve water quality and reduce the risk of disease.

Half the work is already done

Q I have six Discus in a Vision 260 tank. Two of them have been spawning a lot of time together, and I was thinking of using a blackwater extract to encourage them to spawn. Will this help? I use RO water and a heavy metal carbon filter, which gives me a GH of 13 and a pH of 6.5.

MICHAEL BARNES, WALSLEY

A True pair of Discus will spawn so long as the conditions are right.



blackwater extract, and these are much easier as to its effectiveness.

In order to breed your pair, you must separate them from all the other fish and, using your RO and HVA units, raise the GH down to 10 or so.

The pH will then all be around 6.0. You will need a GH of 10, 15% RO and 5% TAP water.

As one of your Discus are a true pair and fully mature, they will not need a blackwater.

MARK EYDEN

Q Can you give the active ingredients of

YOUR DISCUS EXPERT

www.practicalfishkeeping.co.uk
 Answers to your questions are available on the website. For more information, contact the editor at practicalfishkeeping@practicalfishkeeping.co.uk or write to: Practical Fishkeeping, PO Box 100, Walsley, West Yorkshire WF4 7YD. Tel: 01924 666666. Fax: 01924 666667. Email: practicalfishkeeping@practicalfishkeeping.co.uk. Website: www.practicalfishkeeping.co.uk. Twitter: [practicalfishkeeping](https://twitter.com/practicalfishkeeping). Facebook: [practicalfishkeeping](https://www.facebook.com/practicalfishkeeping). YouTube: [practicalfishkeeping](https://www.youtube.com/practicalfishkeeping). Instagram: [practicalfishkeeping](https://www.instagram.com/practicalfishkeeping). LinkedIn: [practicalfishkeeping](https://www.linkedin.com/company/practicalfishkeeping). Pinterest: [practicalfishkeeping](https://www.pinterest.com/practicalfishkeeping). RSS: www.practicalfishkeeping.co.uk/feed. Dribbble: [practicalfishkeeping](https://www.dribbble.com/practicalfishkeeping). SoundCloud: [practicalfishkeeping](https://www.soundcloud.com/practicalfishkeeping). Last.fm: [practicalfishkeeping](https://www.last.fm/music/practicalfishkeeping). Bandcamp: [practicalfishkeeping](https://www.bandcamp.com/practicalfishkeeping). SoundCloud: [practicalfishkeeping](https://www.soundcloud.com/practicalfishkeeping). Last.fm: [practicalfishkeeping](https://www.last.fm/music/practicalfishkeeping). Bandcamp: [practicalfishkeeping](https://www.bandcamp.com/practicalfishkeeping).

Save coal for the fireplace

Q Is it OK to use coal as a substrate in a Discus tank? If

not, would marine black sand be suitable, and can you point me in the direction of a suitable supplier?

SHANECHILL, ABERDEEN

A I am unable to endorse the use

of coal in a substrate as it varies so much in quality and content.

As a result, that black marine sand is suitable as it regulates both the pH and carbonate hardness of water.

If you want a hard

substrate, then DAFac Discus Shady Glass, Barkley's, Walthampton, WY 770, is a good and durable product that is suitable for Discus tanks.

The supplier, Barkley's is 0223 744489000. I

MARK EYDEN

Match water to your dealer's

Q I own a Juwel 190 aquarium that houses various community fishes and would now like to add some Discus. If need be, I would thin down the present population.

Is my tank big enough for them and if so, how many would it comfortably hold? My local water is very hard, but I do have a CO₂ system for the plants.

R. DOWNS, BASHING TON

A You must keep between four and six Discus in a tank that has an 80 litre filter already installed, you won't have that in your tank.

You say your water is hard, without elaborating on the parameters.

Discus will require regular weekly water changes using water prepared by reverse osmosis or a carbon heavy metal carbon filter.

We keep our Discus in water of pH 6.0, 12°GH, KH 4, 30°C/86°F, with conductivity of 100µS.

The best one of them, really, is to prepare your water so that it closely matches that of your dealer.

MARK EYDEN

Prepare your water so it matches that of your Discus supplier.



Photo: Mark Eyden



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Stuff you need to know about... tankmates for Discus

Mark Evenden has some tips on keeping Discus in a community-style set-up.

Discus keepers fall into a number of categories. For one, there aren't the usual hobbyist enthusiasts who will not entertain anything other than a bare-bonored, scientific approach, and the typical "fishkeeper" who wants to own a Discus in his living room, but also wants to create a living scene with plants, tankmates, decor, etc.

It's understandable that people want an aquarium in their home to look good, but it is essential that the basic requirements of the Discus are never overlooked and that any additions, fish or plants, don't just survive but also thrive in these conditions.

For the purpose of this article, we are going to assume you have an established 225-150-gal. aquar. and want to add some Discus to it.

I am also assuming you have some form of water preparation, filter (RO, HVA, reverse, etc.) and that you have an understanding of the basic needs of Discus as far as water quality goes.

I'd say that a pH of 7.0, 12-18H, 1-1.5H, conductivity 500-800 and a temperature of 29°C/85°F is a good compromise on all the options available. But the golden rule is to always match your water to the rest of your Discus supply.

The Discus "community"

The first question for anyone asked a "How many Discus can I have?"

Well, this is where the first debate starts. Many people will quote various "1 in a gallon" ratios, one Discus per 8 gal. and

I won't voice, but just adding six "normal" Discus and if all goes well, by all means add a few more - and you can fit the various strains without fear.

I would, however, advise buying your Discus from a single source and to avoid "the plague" - don't mix fish from humans with Asian Discus. Choose one or the other.

Discus are, by and large, tank-bred these days, but do pick from the Amazon tributaries in South America. Various companies are selling in this region and a range of plants as a package for this type of environment. As a caveat, your local dealer should be able to advise.

The basic Discus set-up will have a large (50-1000) shoal of Cardinal tetras, some Corydoras catfish and one or two smaller ones such as silverfish.

You can add basically anything that is non-aggressive and especially important that tankmates don't compete too aggressively at feeding times with the Discus, and which will thrive in the warmer water. This will include fish that are not necessarily from the Amazon region.



Red-nosed tetras mix well with Discus.

By Corina

I have seen a lot of community tankmates over the years.

- **Some compatible tankmates:** Cardinal tetra, Cuckoo tetra, Red-nosed tetra, Clown loach, White Clown pleco, Blue stripe pleco and Corydoras. (Although some consider the water too warm.)
- **Some incompatible tankmates:** Barb, Common and goldfish pleco, most livebearers such as Guppies, swordtails etc., large fish such as Oscars.

What other people keep

- I asked some of my customers and Discus forum members what they keep with their Discus. Here are a selection of their responses:
- Van Davis: 2 species of stingrays.
 - Peter Griffiths: Breilenses, rather rare.
 - Ben Gibson: Corydoras and Redknoses.
 - Sid Adams: Australian and Easternfin rainbows.

the occasional Eel.

"I've also kept guppies with them, but keep even garden goldfish, with fish at the lower end of the temperature scale."

■ **Milena of Scotland:** "Nothing at the moment as my Discus seem to have an aversion to anything that moves. I even had to remove the Corydoras albifasciatus, they had no fins left."

"The only other living thing in with them now are snails. I have a few small ones and snails in a separate tank that I hope, when they're bigger, can go in with the Discus."

"I've got two breeding sets and what looks like another pair forming, so I presume that's why they give the water fish such a hard time."

- **Milton:** Cardinals, common tetras, Rummy nose tetras, Blue tetras.
- **Ken:** Tetras, Corydoras, Apistogramma trilineata.

Check first

Whatever you want to add to your Discus aquarium, always check that the fish you intend to add will be happy in the same water as the Discus. Always check the water quality.

Why not share your experience on our forum?

Be gentle with

Discus. They are very sensitive to changes in water quality and can be very difficult to keep in a community tank for any length of time, but when they do, they can be a real joy to keep.

That said, it is general consensus that Discus and tetras should be kept together. If there is a large tank, there is a good chance they will be happy together.

COLDWATER LETTER OF THE MONTH



THE READER OF THE UNLUBRICATED LETTER OF THE MONTH

was a 10-year-old NCC (retired) who lived in the same address for 10 years. He had a dog, cat, and was married to a woman who was a nurse. They had a child who was a nurse. He was a member of the NCC and had a dog, cat, and was married to a woman who was a nurse. They had a child who was a nurse.

ROCK

When I bought the 5-ppt rods at the end of the ground, they had the same as I found. I was told that the rods were made of a material that was not suitable for use in a pond. I was told that the rods were made of a material that was not suitable for use in a pond.

I have two ponds fed from waterfalls dropping 9m/30' over a 30m/100' run with a total volume of 20,430 l/4500 gal. and no filtration. The ponds have been filled for nine weeks. There are 18 orfe and two 25cm/10" goldfish.

Searching for the Sabao

I have heard of a fancy goldfish variety called a 'Sabao', which I understand is similar to a Ryukin but with a single caudal fin. Can you throw more light on this description, please?
MARTIN KILUP, DEAL

The Sabao is also known in Japan as the Tamago, and is basically a single-tailed Seno Ryukin. It can be thrown from normal Sabao Ryukin spawnings. However, these single-tailed fish

were called as o-fuyos, but in former times, an attempt has been made by breeders to secure their recognition as a variety in their own right. They can be very attractive fish.

The caudal fin is often held rather differently to the paired fins of the Ryukin, probably due to anatomical differences in the caudal peduncle.

The Sabao is presently in a similar position to the Ryukin of 40 years ago: it is a single-tailed variant of the Ryukin, assumed in the classic goldfish books

Goldfish Varieties and Water Gardens by W. H. Bates. For a while, the Ryukin was recognised as a variety suitable for showing, but breeders looked aside at it and eventually ended up in the Any Other Variety judging class. This is where the Sabao fish are shown, judged alongside Ryukins, Akas and Tokaris.

However, judges tend to favour the single-tailed variety over single-finned fish.

Since then, the whole picture has changed and there are many elegant and pleasing

goldfish which do not fit within any accepted show category. These unique 'one-offs' are well worth seeking.

Sabaos are still something of a novelty, so ask around dealers to see if they can produce them in their next shipment. The imports which attract little interest will be the Seno, and the new breeds are the line to the exporters, who will have a shortage production of any stock which does not sell well.
JOE SMART



Sturgeon requires excellent water quality and plenty of dissolved oxygen.

What happened to my sturgeon?

I have two ponds fed from waterfalls dropping 9m/30' over a 30m/100' run with a total volume of 20,430 l/4500 gal. and no filtration. The ponds have been filled for nine weeks. There are 18 orfe and two 25cm/10" goldfish. I put in two sturgeon,

type unknown. Within three days one died, and two days later the second fish would lie on its side with heavy gill movement for an hour or so, then swim around for five minutes before sinking. There is no visible damage to the fish, and the water has been tested by the pond builder. pH is 8.2.
E. STUART, MUSSELBURGH

Sturgeon can vary from the market. However, adult sturgeon, up to fish several metres in length, is never a good idea to buy fish from

A set-up such as yours with extensive waterfalls needs no filtration once it has been running for several months: the water courses out as bubbles and a supply of dissolved oxygen. But yours is still a new system, and my guess is that your sturgeon died from new pond syndrome, in other words ammonia or nitrite poisoning.

Sturgeon are far more sensitive to toxins than goldfish and orfe, and a difference in pH between your water and the ocean could be the problem. Testing the water when it is not enough it should be

done daily as the pond is settling in. It is also an immediate large (20%) water change.

The pH seems very high for your area, which suggests that either your waterfall contains unacidified mortar or that the rocks are other than the local granite.

It is needs checking out. Have a sample or two of pond water tested on a sample and, if it firms, check your ammonia.

Rocks can be treated with clear 64, but the aim is to make your watercourse safe in going to high.
NICK FLETCHER



Sponsored by Tetra experts in fish health

Hope that goldfish flicking soon improve

Q My goldfish are flicking against the silica sand substrate in their tank but showing no visible parasites, so I treated them with Sterazin. It did not have any effect, so I called the manufacturers, who advised me to start another course of treatment at double the dosage - still no improvement. So I called them again and they told me to start a third course, every day for 10 days.

A But my fish are still flicking! What can I do for them?

CHRIS WOOD, WILMINGTON

Q The problem might be due to the heavy use of parasites, which, especially with fish that have not been medicated for long, can lower the fish's immune levels. High levels of salt water changes will bring their count again.

A I would think that sand should be filtered for the flicking.

Q I've placed a boiler in a tank when this occurs. The substrate is too fine and the fish are picking up particles and putting it in their mouths. I have a 10-gallon tank.

A I would be interested to hear how your fish are on the second spawning season. Do you use gravel capsules?

WYATT ANDERSON

No such thing as a shy goldfish

Q How do I get my goldfish to feed at the surface? I have a 60 x 30 x 30 cm/24" x 12" x 15" tank with six goldfish; three of them are around 15 cm/6" in length, two are 5 cm/2" and one is 10 cm/7", plus two 15 cm/6". Weather loaches. The fish are too shy to take flake until it falls to the bottom.

A Is it possible to buy some sinking pellets for the loaches, which are feeding on flake and live bloodworm?

ROBERT HANEY (14), CARRISLE

Q I have never heard of this. The stressed goldfish doing anything other than gradually



Goldfish are not recommended for their shyness.

bring your goldfish to get at their food.

A I suspect that with so many goldfish in a small tank, and both in tanks and outside, or in recirculation or off-line, that in tropical systems, your water quality is not ideal. This may be the reason why the goldfish are difficult to shoo. Is your water quality that good? They may appear to be feeding up the bottom.

A The only reason you would need sinking pellets,

available from good aquarium stores, is to ensure that bottom dwelling fish get their quota. Wait until your fish are feeding normally before buying any.

A You need to work on your stocking level. Start with the 10-gallon/30-litre tank to house your present stock, and gradually add the water regularly, every 10-20 days, until you reach a 90 x 36 x 30 cm/36" x 15" x 12" tank to house your present stock. Monitor the water regularly, and if things are improving when they do, cut the level! NICK BLETCHER

Wanted... a salt-free pond

Q I added salt to my pond at the rate of half an ounce per gallon to treat fungus. The fish are now clear, but will regular top-ups dilute the salt, which I am told is not good to have in the water permanently?

LUCY SWINNE, MORPETH

Q I am pleased that you succeeded, but such a low dose of salt will not cure the fungus. It is a weak salt bath for the fish, and for reasons you have now discovered. You can use a much higher concentration over a short period of

time, and bring the fish to a salt-free pond.

A I assume by top-up you mean partial water changes, not top-ups are a form of water loss or evaporation. As in most instances, salt does not evaporate, only water, and the only way to reduce salt concentration is to remove some water and replace it.

A Such a large pond would need at least a 100-gallon overflow to keep the water level constant. To find out whether there are any ponds, lakes or streams in your area, check the local council or the Environment Agency. You can also check the local council or the Environment Agency. You can also check the local council or the Environment Agency.

NICK BLETCHER



Salt isn't recommended as a permanent treatment in your pond.

YOUR GOLDWATER EXPERTS

CHRIS WOOD (14) is the author of *Goldfish* (1997) and *Goldfish* (2001). He is also the author of *Goldfish* (2001) and *Goldfish* (2001). He is also the author of *Goldfish* (2001) and *Goldfish* (2001).

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Singing the blues

For many people who desire to breed their fish, it is difficult when they ask their suppliers about the fish they are available to purchase for Green Terror Cichlids. Yes, while both are all available and easy to breed, perhaps one is a little more gray, while the other is the Blue Acara. This South and Central American cichlid which comes from Trinidad and Venezuela, has been sadly overfished in recent years. Other species, as the name would imply, is not all that worth in the home Green Terror fish.

However, Blue Acara make excellent parents, are easy to breed, feeding starting from adult to our own and have huge amounts of information. About 250 per gallon, they are affordable and make an excellent beginner for a breeding project.

male and up, as well as fish in the tank with breeding. With this in mind, it is just as easy to breed them as well as you want to breed them.

Blue Acara are an especially bold and shy fish pair, some enough to be seen, but not into just three minutes. During their first breeding, I put my hand in the tank to add some food, and was immediately attacked by a very aggressive 20cm female.

Acaras are very voracious, though they prefer water lettuce. They will take any algae, live, dead, or the food that is broken up and eaten as part of their diet and usually do not eat other tank foods. They can be quite messy, so you will need to keep on top of water changes.

Blue Acara are a great choice for a beginner, but be aware that when

young, they look like Green Terror. It is also had an unfortunate reputation for being the worst of a Green Terror instead of a Blue Acara, and then get worse if it helps a few more weeks, the problem goes away.

A good start up for breeding you can get a tank with a 200-250 gallon capacity and a small amount of substrate or sand. Acaras will readily accept a great many aquarium plants, so you can use Acaras growing in a pond as one of the best options for a beginner.

Acaras can be difficult to see at a young age, so it's best to buy fry and grow them in a well-lit tank and return the remaining fish, unless your shop has a very mature stock. A few Acaras have a more elaborate coloration with orange edges, but it is hard to see about twice the size of the female.

Care and maintenance

Blue Acara, Aquarists who have their origins in South America and southern Central America, but in some areas they are considered a pest. They are usually an aquarium with a range of 50-60, with an average female are about 20-25cm, but 20-30cm is a better for breeding.

Male grow to 15-18cm, 20-25cm, the equivalent, with females close to 10cm. It is a good idea to have a tank of around 50 gallons, and they can live for as long as 10 years. As with most cichlids, they are very colorful, though small fish and they will be easy to breed, and they will



Quick Notes: Blue Acara have an elaborate coloration with an orange edge to it.

Fun Fact: The parents will shepherd the fry in the tank.

What's an attractive shade of blue, easy to breed, has a great character and makes an excellent parent? **Daniel Grove** has the answer.

Parenting

This, of course, is one of the key questions of cichlids. They take excellent care of their young, guarding them and feeding them. And blue acaras are no exception. That being said, it is not unknown for some fish to abandon their young or a number of reasons, such as stress or overpopulation. So to the parent, you will have to be removed immediately to ward off any error.

The blue acaras will, at least or inside a hot pipe, start laying eggs on a list of spawning and draining of coxus by the male. Between 200 and 300 eggs are laid, though this can vary a great deal. Instead, instead of 1000 fry have been raised.

The parents take it in turn to fan water over the eggs to oxygenate them and guard the tank. They also remove any extra eggs that become moulded. Any fish that are done close are seen off harshly, sometimes with a degree of brutality. Also, in using the parents during the breeding period, if they perish, they may not their young.

Care of the fry

Egg hatching is around three days and the swimming stage in the substrate to raise the fry until they are free-swimming. The young should be fed every two hours.

When you feed the parents, use three or four large pieces of food a night, but provide the fry for them to feed on. However, it is a little sufficient food source.

Blue acaras are extremely bold. My first pair were tame enough to be hand-fed after just three months.

These fish are bold egg eaters. As they become a good food, they are high in protein and make excellent food for cichlids and they are considered by most available fish and shops. They have a good idea, but the need to be cultured at home.

Wild eye food you use should have a high protein content. Most will show this on the packaging in percentage, usually 35-40%. Just the best, protein content fry food you can to promote fast growth.

The parents will move the fry around the tank to feed, collecting any stragglers in their mouths and bring them back to the group. At night, the fry are gathered into the net, with the same procedure. When you see the fish to guard them.

After about ten weeks,

the fry can be moved to a raising tank. As a suitable size, 10-150 gallons may grow rapidly, and you are likely to have many of them. Use a sponge filter as long as the fish are small enough to risk being sucked into a power filter. At 600 just one or two filters. I usually have a permanent sump of 1000 gallons for feeding in the other tanks. For ease of cleaning, you can't cast a substrate-free tank.

The fry can now be fed on shelled blue, sea yolk, and use their feed 2 times a day, 10-15 minutes.

As the young acaras have a tendency to be a little bit, they are likely to spend more or more a month, so be sure to find a local shop that will take the juveniles off your hands, preferably in exchange for store credit. Shops usually request that you are not to feed them before you bring them in.



The biOrb aquarium

Part two of an in-depth look at the biOrb aquarium covers the maintenance of a healthy environment for your fish.

The biOrb is a bite-size fish tank from Reef. One combines the look of a traditional fish tank with the performance of a high-end aquarium. Last month we saw how its clever, easy-to-use air-powered filtration system combines ceramic media and a disposable filter cartridge to provide biological, mechanical and chemical filtration. The optional light unit produces white daylight light for natural colours.

Keeping fish

As the biOrb is so simple to use, it would be easy to rush home and set it up without thought for proper stocking. Last month we saw an excellent fish care, matching the aquarium with the number of fish (three shiners and one trout), and waiting a month before adding more.

We also learned how to choose the fish and to introduce them

Keeping a healthy biOrb

Feeding: Ever when the biOrb is matured, feed sparingly. Live-foods can cause the biOrb filter and its pump to clog, so only pollute the aquarium.

A greenish water or opaque milky pale, will suffice for most, but particles of fish food, sinking tablets and frozen, untreated foods make a change. Offer occasional sticks of cucumber or blanched potato.

Planting: Red plants use up nitrate and phosphate, out-competing algae. But also be aware of some



among plants, and some enjoy growing on them.

Some plants can be difficult to grow, so start with inexpensive varieties and stick with those that work. Many people use artificial aquarium plants of plastic or silk.

Use the ceramic media to anchor plants or to leave them onto gravel and aquarium rocks. A little gardening will keep work looking their best. Remove dead leaves when you see them.

Make sure the plants you buy are aquarium plants and not varieties and the ponds or even semi-aquatic varieties.

Water changes

Nutrients build up in the aquarium and affect water quality, encroaching algae and eventually damaging fish health. Diluting the aquarium water usually keeps these nutrients at a safe level.

The design of the biOrb means that you never remove more than 20% of the aquarium's volume at one time. This ensures a healthy population of filter bacteria and does not cause sudden chemical changes shock to the fish. Prepare the water with the

water in the biOrb water kit.

Remove a space heater and other appliances from tapwater, which are harmful to fish and filter bacteria. The second contains bacteria in liquid form to top up the filter.

Maintenance

Wipe the diaphragm from the sediment trap out into the tapwater. Allow the water to settle for at least an hour, preferably 24 hours. Wipe the inside of the biOrb with the cleaning pad to remove any algal growth. The mesh cage will be sufficient more often.

Turn off the air pump, gently twist the grill tube and top of the filter cover anti-clockwise and lift away the filter. Squeeze off a third of the water. Avoiding the rocks will not break any of the air pump. Place a syringe tube into the filter holes and suck through the holes.

Outside the aquarium, twist the old filter cartridge off the grill in a clockwise direction. Fit a new filter cartridge, ensuring all four tabs are locked. Make sure there are no fish in the way when you fit the new filter cartridge into the base unit.

Top up with water or turn on the air pump. Allow the water to settle for an hour, then add the chemicals from the Stress Zone sachet.

Cleaning the biOrb

The biOrb has a first stage system with biological, mechanical and chemical filtration to remove its impurities from as long as six weeks.

The membrane and disposable filtration is housed in the filter cartridge. It filters dirt and the acidic seawater, removes chemicals. Replace it when full.

Regular filter cartridge changes will increase the biOrb's life.

Ceramic media (not, most made ceramic media is used in biOrb applications).

Once matured, never add more tapwater, which will destroy the bio-film.

The media is stainless-steel, locked so, very high temperatures, and will not rust. This provides a massive surface area of ceramic filter bacteria.



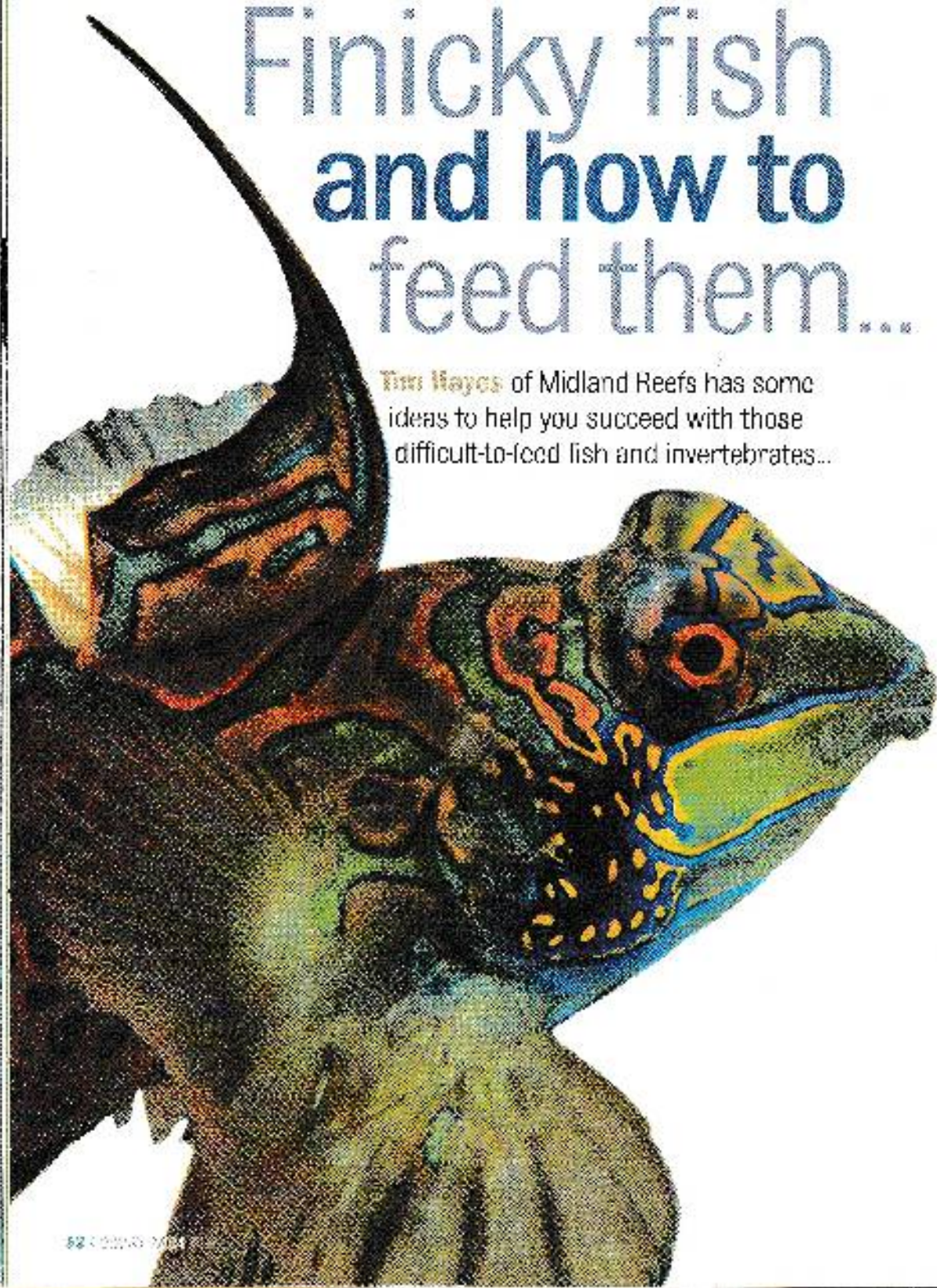
biOrbs are ideal suitable for aquaria tropical fish.

Visit www.reef-obs.com for more product information.

Don't miss the chance to win a biOrb in next month's issue!

Finicky fish and how to feed them...

Tim Hayes of Midland Reefs has some ideas to help you succeed with those difficult-to-feed fish and invertebrates...





If you need to see more about the topic, visit www.fishbase.org and search for the species name. If you need more information, visit www.fishbase.org and search for the species name. If you need more information, visit www.fishbase.org and search for the species name.

LEFT: Surge wrasse (fish). **MIDDLE:** Surge wrasse (fish). **RIGHT:** Surge wrasse (fish).

LEFT: Surge wrasse (fish). **MIDDLE:** Surge wrasse (fish). **RIGHT:** Surge wrasse (fish).

in all use of carrying a ration, but unfortunately, many newly arrived fish in the wild do keep their mouths busy.

So, to acquire it's the regimen to the rescue.

But this one would have to be the substrate involved in the daily tank and regimen.

Again, remember to limit yourself to a small number of animals related to all fish, and choose a less you have the fish to maintain large numbers of fish.

Wrasse

There are a number of tanks of fish where when the strategies above would be of use, such as www.fishbase.org.

If you're looking for a tank for the fish, the tank could be appropriate for fish like www.fishbase.org and www.fishbase.org, and for fish like www.fishbase.org and www.fishbase.org.

Importance

There are a number of reasons the present is still similar problems. To say that some of these are already impossible is a bit of an overstatement, but it's certainly true that the present is still similar problems. To say that some of these are already impossible is a bit of an overstatement, but it's certainly true that the present is still similar problems.

In other words, there's a lot of fish to feed in a tank, and you can't do it with a single feeding strategy.

For example, the very active species of the genus www.fishbase.org, the www.fishbase.org fish, are not appropriate feeding. They're not the same.

And finally, there are species of sea stars that are sometimes considered as pests by sea keepers that can be used as food for many

organisms in the fish tank, but they're not the best choice for a tank.

There are stars of the genus www.fishbase.org, many grow as large as 1.5m (5ft). They reproduce by fission, and by splitting in two. Because of this, you often see regularly shaped specimens with eight or other legs, a reflection of the tank dedicated to the needs of the starfish, and a steady source of food for the fish.

Or how about the fact that many of the fish in the tank are www.fishbase.org fish? Well, to ensure the fish are up to the standards for the purpose of eating, and to ensure the fish are up to the standards for the purpose of eating, and to ensure the fish are up to the standards for the purpose of eating.

One very important thing to do is to ensure the fish are up to the standards for the purpose of eating, and to ensure the fish are up to the standards for the purpose of eating, and to ensure the fish are up to the standards for the purpose of eating.



The reason for this is that feeding habits of only species in the same tank, and only if it's all part of a busy day, is better for feeding. And when it's all part of a busy day, it's better for feeding. And when it's all part of a busy day, it's better for feeding.

It is better to have a busy day feeding to be better. Use a busy day to be better. Use a busy day to be better. Use a busy day to be better. Use a busy day to be better.

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One very important thing to do is to ensure the fish are up to the standards for the purpose of eating, and to ensure the fish are up to the standards for the purpose of eating, and to ensure the fish are up to the standards for the purpose of eating.

10 great pond plants

Looking to give your pond a makeover of sorts? Plants can create a totally different feel. We offer some suggestions.

Your decking plants have been planted, and you've ordered your spa, well, everything's in place, and now your attention turns to the pond. A pond was to give you a different look, and to create fresh habitats. It's to add new plants. We have some suggestions, and a few to avoid in your garden, lake, or pond.

**1 Marsh marigold,
*Caltha palustris***

Size: To 18 in. tall (60 cm)
Preferred habitat: A-keeps water marginal but can be grown in either a shallow or deep water (25 in. water) of water. Full sun or partial shade.
Notes: Bright yellow flowers appear in the spring. Flowers die, but seeds can be stored from fall to the summer.

**2 Anemily,
*Zantedeschia aethiopica***
Size: Up to 120 in. (4 m) tall



1
C. H. P. R.



3
C. H. P. R.



or daisy, 26 in. (90 cm) tall or more.
Preferred habitat: Moist soil or water. 20 in. (60 cm) tall in water. Full sun. Flowers in dense water in freshwater areas for 1 year or more.
Notes: Locally grown, as a pond-plant in fresh water areas. Grows through 15 in. (60 cm) water with height 20 in. (60 cm). A tall, upright plant with flowers in spring or summer. Use in a

**3 Pickerel weed,
*Pontederia cordata***
Size: 55-60 in. (1.7-1.8 m)
Preferred habitat: Grows well in a range of water depths from 10 in. (30 cm) to 24 in. (60 cm). Full sun.
Notes: These plants need full light. Water cover in winter to protect the plants from frost. Plant in large, open containers. They have long, waxy leaves.

**4 Crisp,
*Lagarosiphon major***
Size: Leaves are 20 in. (60 cm) long. 20 in. (60 cm) tall in water. Full sun.
Preferred habitat: Full sun, with plenty of air.
Notes: Propagation is easy. The plant stems are 10 in. (30 cm) long. A stem is cut and placed in the bottom of the pond. The flowers appear in summer, but these are usually unattractive.

**5 Juncitaynia
*cordata***
Size: Usually 15-20 in. (40-50 cm)
Preferred habitat: Shallow water. A light, sandy bottom of water. Full sun or partial shade.
Notes: Very adaptable, it will also grow in a shallow, full sun. It contains a lot of water. It is a very small, green plant.



6 Dwarf reedmace, *Typha minima*

Size: Up to 76cm/30"
Preferred habitat: Shallow water or in moist soil down to 15cm/6". Prefers full sun.
Notes: Also known as Cattle tail. This is one of the *Typha* species suited for small ponds. Best kept in containers to minimize spread. Narrow, blade-like leaves and an umbrella-like

7 Water iris, *Iris laevis*

Size: Up to 1m/4ft
Preferred habitat: Shallow water marginal or moist soil down to 15cm/6" if in air.
Notes: Check whether you are buying a hybrid such as *Iris cristata* because it will not tolerate full submersion. Short-lived blooms (three to four weeks) herald the summer flowering season.

8 'Froebelii' Water lily, *Nymphaea froebelii*

Size: The widely spaced flowers can reach up to 18cm/7"; the leaves up to 15cm/6". Spreads up to 80cm/30".
Preferred habitat: Water depth around 15-38cm/6-12".
Notes: This is a miniature, hairy water lily which is suitable for small and medium-sized ponds. Although suitable for shallow water ensure the flowers do not freeze in winter. Like all water lilies this species does not like flowing water or to be quashed on its leaves, so position it away from waterfall or other features.

9 Golden dub, *Orontium aquaticum*

Size: 30cm/12"
Preferred habitat: Can grow as a sedge or emergent plant,

depending on planting depth. Water level to 4cm/1 1/2" for a 'sun set' effect. 8-25cm/3-10" for marginal. Grow on in full sun or part shade.
Notes: The unusual yellow and white, pinwheel flowers of this knee plant appear in late spring.

10 *Mimulus* sp.

Size: Up to 50cm/12" to 60cm/24" for *M. aurantiacus*
Preferred habitat: Moist, not submerged; in full sun or soft shade.
Notes: Lush stems with opposite-type flowers in summer. Several species are available, not all are hardy. One of the hardiest is *M. Alaska*, Yellow Mimulus, which self-seeds freely. *M. sandwicensis*, Cardinal Monkey Flower, needs winter protection.



Interesting imports

Matt Clarke looks at some of the new and unusual fish in the shops at the moment.



Fact file

Scientific name: *Aplocheilichthys spilargyrea*. **Origin:** This species is endemic to Sri Lanka and has been introduced from Sri Lanka's forest and

at home in the UK? No. **Size:** To 10cm. **Substrate:** Any, provided it's not too deep. **Water:** Around 20°C. **Light:** Bright. **Feeding:** Invertebrates, including worms and

shallow, fast flowing water. It is said to be able to swim under a rock to feed and is known to bury high obstacles.

Water: Forms a burr, adaptable and looks happy in hard, alkaline water. They come from soft, well oxygenated water, so don't let the tank get too warm.

Equipment: Add lots of smooth, rounded pebbles on a gravel bottom and install some powerful air-stones. **Others:** To provide plenty of low, broad light, use other fishes and say just moving litree, such as dams or Redfish, and maybe the likes of anything with long, flowing fins. **Availability:** Unlike most of the other imports, it is

not present all over the world, but is available. The species should have a bright, reddish orange and yellow body with dark vertical bands on the body, plus a greenish tint to the base of the caudal and pelvic fins. The head of the specimen may be the darkest.

Notes: Like some other species of native fish, both this one can sometimes be a little territorial. **Availability:** This species usually can be found in shops and other sources of fish and is unlikely to be offered more than once. We spotted these for sale in London's Aquatic Garden. **Price:** £6.99 (2008)



Fact file

Scientific name: *Aplocheilichthys spilargyrea*. **Origin:** This species is endemic to Sri Lanka and has been introduced from Sri Lanka's forest and

Size: Usually 7-10cm. **Water:** Invertebrates, including worms and shallow, fast flowing water. It is said to be able to swim under a rock to feed and is known to bury high obstacles.

Water: Forms a burr, adaptable and looks happy in hard, alkaline water. They come from soft, well oxygenated water, so don't let the tank get too warm.

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Scientific name: *Parrotichthys* *fluviatilis* (Peters)
Origin: P. fluviatilis is found in Kyrgyzstan and 90% of its population is collected from the original habitat.

Appearance: Body may vary in depth but always a rounded shape. It has a large eye and a number of small black spots on its body. It has a long dorsal fin and a long tail. It is a very active fish and is known for its jumping ability.

Water: Very adaptable, it can be kept in both soft and hard water. It is a very hardy fish and is known for its ability to survive in a wide range of water conditions.

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Meet the expert
Steve Gibbs has spent a lifetime working in the aquarium industry. He has worked for the U.S. Navy, the U.S. Coast Guard, and the U.S. Marine Corps. He is currently the owner of Holburn Tropicals, a large aquarium in Holburn, New York.

Holburn Tropicals



150 Holburn Street
 Holburn, NY 11743
 Tel: 845-862-3333

Hours: 10am-6pm
 Sun: 10am-4pm
 Wed: 1pm-5pm

Website: www.holburn.com

Excited to announce the new addition to the Holburn Tropicals aquarium. We have added a new section for the public to view the tanks.

Hours: 10am-6pm
 Sun: 10am-4pm
 Wed: 1pm-5pm



Specialty fish: Make your own custom tank. We have a large selection of fish and plants to choose from. We also offer a variety of services for the public.



Meet the experts
Doug Martin and Chris Robinson are the owners of Waterworld, a large aquarium in Waterworld, New York. They have spent a lifetime working in the aquarium industry and are passionate about the fish and plants they care for.

Waterworld



170 Water Street
 Waterworld, NY 11791
 Tel: 845-862-3333

Hours: 10am-6pm
 Sun: 10am-4pm
 Wed: 1pm-5pm

Excited to announce the new addition to the Waterworld aquarium. We have added a new section for the public to view the tanks.

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 Sun: 10am-4pm
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Meet the expert
Doug Martin is the owner of A1 Aquatics, a large aquarium in A1 Aquatics, New York. He has spent a lifetime working in the aquarium industry and is passionate about the fish and plants he cares for.

A1 Aquatics



110 A1 Aquatics Street
 A1 Aquatics, NY 11791
 Tel: 845-862-3333

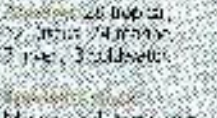
Hours: 10am-6pm
 Sun: 10am-4pm
 Wed: 1pm-5pm

Website: www.a1aquatics.com

Excited to announce the new addition to the A1 Aquatics aquarium. We have added a new section for the public to view the tanks.

Hours: 10am-6pm
 Sun: 10am-4pm
 Wed: 1pm-5pm

Website: www.a1aquatics.com



Specialty fish: Make your own custom tank. We have a large selection of fish and plants to choose from. We also offer a variety of services for the public.

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The PFK Retail Guide



Neon tetras are popular for their vibrant colors and ease of care.



Dwarf gouramis are popular for their unique patterns and colors.



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Dwarf gouramis are popular for their unique patterns and colors.

What we think

The variety of colors and patterns in these fish makes them a popular choice for hobbyists. They are also relatively easy to care for, making them a great choice for beginners.

These fish are also known for their peaceful nature, making them a good choice for community tanks.

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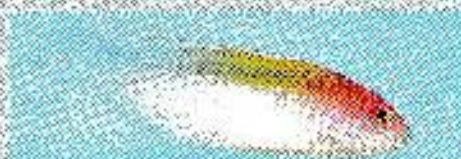


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Buyer's guide

Aquarium cabinets

Matt Clarke checks out a handful of the hundreds of aquarium cabinet and tank combinations on the market at our local aquatic stores.

If you want a tank that fits in better with your decor than the usual mass-produced kit varieties, a tank and cabinet combination might be your best option. Besides being available in a much wider range of colours, sizes and styles, most of the models shown here are much more versatile than the kit variety. You won't usually need to buy the filter in order to

install an in-line or external filter, and you're not being forced into using a filter or lighting combination that might not be the best choice for the livestock you plan to keep.

Virtually all of the main features here will also produce bespoke tanks and cabinets to your own design, and because they build so many, they can often supply nearby shops on making your own

designs even better. If you want a weir section adding to the tank, or extra space in the cabinet below to accommodate a sump or an external filter, for a few extra quid, and a short wait, you can have a tank built to your exact specifications. Quite a few companies also offer a colour-matching service, so you can even get them to make the cabinet and hood the same colour as

the rest of your furniture.

We visited The Waterworld in Peterborough, Hollibush in Staffordshire and Meiderhead Aquatics in Herefordshire to see what they had on offer.

The prices we're quoted here are the ones we saw the tanks and cabinets on sale for, and might differ at your local store. Many thanks to all of the retailers who helped us out.

What's on the market?

Peak Aquatics

Peak Aquatics now produce a number of tanks, most of which are made from melamine-faced plywood (MFC). A few of these come with filtration, heating and lighting facilities and are available as just the tanks and cabinets or their own

Designs in the Boutique range have a polished wood veneer, so they look more substantial and expensive than the MFC models. Besides the usual hooded, top-blew two-chamber design, there are 50 x 50 x 60cm (24" x 24" x 12") to 75" x 74" x 27", there are also desktop corner tanks 60 x 36" and 120cm (48") residential and outdoor tanks of 50 x 75 x 30cm (20" x 29" x 25") and 75 x 50cm (30" x 20") with a five-shelf corner tank which is 75 x 95" wide.

The Boutique range has a very basic, utilitarian cabinet

with two simple doors, and comes with a bio filter, also made from MFC. This looks OK, but the effect isn't quite as sleek as one of the built-in line from Seabree, which looks a little less busy, thanks to the hood being an integral part of the top of the tank.

The Amazon tanks come in sizes from 51 x 52cm (24" x 12") to 120 x 55cm (48" x 15") and are available in either black or oiled.

The Parched Wood Venetian has two doors, a bio filter, compressed lighting, and comes in melamine, pine and light or medium oak. These range in size from 51 x 52 x 38cm (20" x 21" x 15") to 120 x 90 x 66cm (48" x 36" x 26") standard, and have a two-door design. Sizes of up to 145 x 45 x 48cm (57" x 18" x 19") can be ordered specially

We also sell a 101 x 51 x 41cm (40" x 20" x 16") tank and 100cm (40") wide bio tank which looks very similar to the Amazon models from here. The tank is finished with black slatwood, which looks really smart on the wood-grain as well as fitting in well with a room for access at the top.

Although it looks pretty good, the slatwood used does give it a slightly crisper look than the tanks made from veneered MFC, we think.

If that's not the style you're after, it's supplied as a complete set including the built-in Meiderhead external filter and heater, it costs £290.

Besides the two-chamber models which vary in size from 51 x 51 x 31cm (20" x 20" x 12") to 120 x 90 x 66cm (48" x 36" x 26"), there are also three-chamber, six-chamber and residential models and residential two-chamber models.



Photo: © J. H. The Peak Ltd

These are available in eight colours: birch, maple, pine, birch, black, light oak, Winchester oak and melamine.

For more details on the prices on offer call Peak Aquatics on 01753 24248.

Premier cabinet in Winchester oak.

Buyer's guide

Clearseal Ultra



Clearseal



Clearseal

Clearseal products are available in a wide range of finishes, including the new Ultra Clearseal. The Ultra Clearseal is a new series of products that offer a clear, glossy finish and a wide range of colors. The Ultra Clearseal is a new series of products that offer a clear, glossy finish and a wide range of colors.

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We found the Ultra Clearseal to be a very good product. The Ultra Clearseal is a new series of products that offer a clear, glossy finish and a wide range of colors.

We were very impressed with the Ultra Clearseal. The Ultra Clearseal is a new series of products that offer a clear, glossy finish and a wide range of colors.

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For more information, contact Clearseal at 1-800-375-0148.

