

FISHKEEPERS' AND WATER GARDENERS'

BULLETIN

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**PICTURE: *Acanthodoras cataphractus* by Chris Ralph
Taken at Basingstoke Fish Show, 26 September 2004**

See article on page 31



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A COMPLETE ENVIRONMENT FOR YOUR FISH

By Les Holliday

Nothing quite beats the clarity and visual beauty of a nicely designed and well-kept aquarium. One of the joys of the aquarium is the striking effect it has on a room. Research also shows that the tranquility of the underwater world has a definite effect on reducing stress levels. Why then doesn't the aquarium always have the privileged position as the focal point in most aquarists' homes? Well usually it's a question of style as many fish enthusiasts are inclined to look beyond the untidy tangle of wiring and other paraphernalia of miscellaneous articles or equipment surrounding their tank and concentrate on the contents. However, in today's world of TV home makeovers it seems to be everyone's need to live in a stylish clutter free home environment and the aquarium has to be equally good looking and compliment this style.

If you aren't a gifted home designer or cabinetmaker the answer to acquiring a stylish looking aquarium is to invest in one of the packaged all-in-one aquarium sets. These are often state of the art designs that not only have great aesthetic appeal but also are complete environments for your fish including advanced forms of heating, lighting and filtration all put together in a fully integrated manner. Complete aquarium sets also have a huge advantage in that they overcome all of the hassle of deciding the specification of a new aquarium in terms of the size and type

of individual pieces of equipment you need to purchase and the worries that once installed they will work efficiently and fit where they should.

Obviously it is the look of an aquarium set which will be the first criteria you are likely to go for and this is very important. A good package will include the tank with integral lighting canopy and a stylish matching stand or cabinet. Don't try to cut corners and place your new aquarium on a wrought iron or angle iron stand, hi-fi, video or TV cabinet and particularly avoid light articles of furniture or self-assembly furniture. Remember one litre of water weighs as much as a kilo and you could need to be supporting a tank weighing in excess of 200 kilos when installed. Use of furniture or other forms of base can also easily invalidate your aquarium set guarantee should the worst occur.

Lighting is a particularly important consideration and needs to be of good quality and that means the canopy must be of a good design and well made. It is also essential to ensure that the specification meets your requirements. It is often very difficult to modify integrated aquarium system lighting should you need to upgrade it to a better level so choose the aquarium set with the best spec for you from the start. Similarly, with filtration steer clear of aquarium sets with built in filters which might not come up to your expectations

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Fellow Fish keepers,

Welcome to this June edition of the Federation's Bulletin. Here are some of the attractions of the New Venue, for this years Festival of Fishkeeping, Mill Rythe Holiday Village, Hayling Island, PO11 0PB

Fish Shows: Supreme Championship Final, British Open Final, "Laguna" Koi Festival, Goldfish Show, Catfish Show, Discus Show, Hagen Masters Trop. & Coldwater Open Show.

Outdoor Activities: Tennis, French Boules - Pentanque, All Weather Bowling Green, 9 Hole Pitch & Put, Football, Volley Ball, Abseiling & Climbing**, Archery**, Giant Chess, Crazy Golf, Rifle Shooting**.

Splashing Around: Indoor Leisure Pool, Jacuzzi, Sauna, Snorkeling**.

Kids & Teenagers: The Fun Lab for 5-8 year olds, Pre-T 9-12 Year olds, Teenager Territory for 13-17 year olds Adventure Play Ground Soft Play Fun Palace**

Pubs, Clubs & Shows: Large Family Cabaret Room, Hudsons Bar, Spectacular Shows, Live Music & Cabaret.

Indoor Activities: Snooker**, Billiards**, Amusement Arcade**, Darts, Pool Tables**, Short Mat Bowls.

Shops & Services: Rainbow Café, Snack Dragon, Gift Shop, Quick Tan Sun Bed, Waterfalls Health & Beauty Spa, Launderette, Cash Machine.

** Moderate Charge ** Age/Height Restriction. As you can see this new venue accommodates all age groups, we have a few more rooms so why not bring the family for a truly great weekend?

Do not miss the Middlesex Tropical & Coldwater Fish Show 3rd July 2005

Peter Furze, Editor

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but are next to impossible to modify. Filters vary considerably in their sophistication and effectiveness and you need to seek proper guidance again that your requirements are going to be met.

The Hagen Fluval Uno and Duo Deep aquarium sets are good examples of



what an aquarium package should contain and provide. Tanks in these sets are made from glass, a material preferable to acrylic due to its greater resistance to scratches. In general it is best to select the largest aquarium possible to ensure a more stable environment and greater choice of fish and plants. The Fluval range varies in size from a 37.5 ltr / 8.2 gal capacity model through seven different sizes up to the largest with a capacity of 216 ltr / 47.5 gal. The lighting is exclusively designed for Fluval aquarium sets and features a revolutionary Light-Glo Canopy design. White oxidation-free plastic reflectors provide superior light reflection as compared with aluminium



or other metallic reflectors and the hood features an integral hatch which makes feeding, treating and water changing quick and easy plus the anti capillary fitting prevents condensation from escaping onto the outside glass. Available with single or double light tube fittings the condensation-proofed tubes can be chosen from the extensive Fluval range. Filtration is provided by the well-tested range of Fluval Plus submersible internal filters, each aquarium set model matched with the correct filter size. These best selling filters come complete with carbon, foam and polyester filter media and have a long record of quality and reliability.

Both the Uno and Duo models have dedicated cabinets available in black or beech. The Uno range features a single light tube canopy and tank sizes are suitable for homes with limited space as they range between 37.5 - 96 ltrs / 8.2 - 21 gal whilst the Duo Deep range have larger aquarium volumes, 84 - 216 ltrs / 18 - 47.5 gal, include double light canopies and sturdy bottom cabinets to ensure the aquarium has the appropriate support.

Aquarium set packages are seldom as complete as the Fluval range as each package comes ready to add the gravel and water in preparation for the plants and fish. Lighting tubes and filter media are included plus a heater and digital thermometer to assist in temperature control. Water care treatments like Nutrafin Aqua Plus to pre-treat the tap water and Nutrafin Cycle to kick start the filter are also

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overheating in summer and cooling down draughts in winter. Other direct sources of heat such as fires and radiators should also be avoided. Strange as it may seem fish are also easily stressed by loud noises or to be more correct the vibrations these cause. Keep the aquarium away from sources of sound such as speakers and TVs.

An ideal location for your new aquarium would be an inside wall in the living room with uninterrupted viewing from a favourite chair or the settee and allowing easy access above and to each side plus a 6 to 7 cm gap behind to run wiring etc. Where possible the area should be adequately vented to allow any excess heat generated by the aquarium to escape. It is sometimes recommended that aquariums should be arranged free standing as a room divider but in practice this is seldom a good choice as aquarium sets are usually designed to fit against a wall and it is difficult to decorate a tank to be viewed from each side.

provided and for ongoing maintenance Nutrafin Plant Gro and Green X Phosphate Remover for an algae free tank environment. The clear concise Aquarium Care Guide gives step-by-step advice on how to start up and maintain your Fluval system and includes a written guarantee for the aquarium set. There is even a supply of Nutrafin fish food and a selection of plastic plants to start you on your way.

Once you have chosen and purchased your aquarium set you will want to find a location which will give it pride of place. However, there are a number of simple rules for locating your aquarium to get the most from it and ensure the health and welfare of your fish. First of all, make sure your aquarium is sited away from direct sunlight as this can cause significant algae problems especially if the window is south facing. You are also likely to have problems with temperature control with

Keeping fish is both a relaxing and absorbing hobby and an endless fascination for the whole family. Creating and maintaining a perfect and complete environment for your fish is easy with the right kind of equipment and everything you need provided so for many of us the ideal choice is a ready built and equipped aquarium set.

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FESTIVAL OF FISHKEEPING & WATER GARDENING WEEKEND

14th - 16th October 2005



Day Visitors Saturday 15th and Sunday 16th
10 am to 5 pm Entrance Free sponsored by Aquarian

"Hagen Masters" Open Show
(On Sunday - Sponsored by Rolf C Hagen)

The Laguna Southern Koi Festival
(Sponsored by "Laguna")

Goldfish Society of Great Britain Fish Show
(On Saturday - Sponsored by Aquarian)

British Open Final
(On Saturday Sponsored By Tetra)

The FBAS "Supreme Championship" Final
(On Sunday Sponsored By Tetra)

Catfish Show - Sponsored by Rolf C Hagen
(The Southern Counties Koi Club Society in association with AQUARIAN)

"Jinchu Kai" UK Ranchu Specialist Gold Fish
(Sponsored by Aquarian)

Marine Display
U.K. Discus Show
(Sponsored By Tetra)

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Marine Fish, Discus
Koi & Goldfish
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&
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Independent tests carried out by UKAS (United Kingdom Accreditation Service) - an accredited laboratory using approved methods - have shown that AQUARIAN® products consistently provide complete nutrition for all species, based on National Research Council guidelines.

they deliver the highest levels of digestibility and palatability, reduce the risk of poor water quality caused by excessive ammonia excretion as a result of too much protein. The amino acid profile of each AQUARIAN® fish food is tailored to the groups of fish for which each product is designed.

The need for longer chain fatty acids in the diet of most marine species is another crucial requirement specifically catered for by the AQUARIAN® range. Whilst the full vitamin needs of all ornamental fish species are met through the AQUARIAN® vitamin supplement formulations.

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FISH INTELLIGENCE

By Robert Matthews - Sunday Telegraph Science Correspondent

Fast-learning fish have memories that put their owners to shame. "We know that some fish will go into a sulk if someone else tries to feed them!"

If you thought fish were cold, wet creatures who forget everything in three seconds (Iai, think again. Scientists have found they are fast learners, carry mental maps around in their heads - and can retain memories for months. Swimming gormlessly around in their bowls or tanks, fish have long been dismissed as dunces compared with "higher" animals such as rats, cats, dogs and primates. This view is now being challenged by findings that could re-ignite the debate over the cruelty of angling. Tests on fish in aquaria at Oxford University have shown that despite their tiny brains, they possess cognitive abilities outstripping those of some small mammals.

Dr Theresa Burt de Perera made the discovery using blind Mexican cave fish, which rely on subtle changes in pressure to detect the presence of objects around them. In experiments, Dr Burt de Perera found that the fish did more than merely avoid bumping into objects in their tank. They built a detailed map of their surroundings, memorising the obstacles in them within a few hours. Once stored in their brains, the fish used their 'mental map' to spot changes in the obstacles around them - a feat that defeats hamsters. In one test, involving obstacles arranged in a specific order, the fish proved capable of memorising the order and quickly spotted when Dr Burt de Perera swapped obstacles around.

According to Dr Burt de Perera, the findings - which appear in the current

issue of the Proceedings of the Royal Society - show that fish are underestimated. "The public perception of them is that they are pea-brained numbskulls that can't remember things for more than a few seconds," she told The Sunday Telegraph. "We are now finding that they are very capable of learning and remembering, and possess a range of cognitive skills that would surprise many people."

Laboratory tests on other fish have found that they can store memories for many months, confounding the belief that they forget everything after a few seconds.

Dr Culum Brown at the University of Edinburgh has found that Australian crimson spotted rainbowfish, which learnt to escape from a net in their tank, remembered how they did it 11 months later. This is equivalent to a human recalling a lesson learnt 40 years ago.

Dr Burt de Perera's findings have been welcomed by fish-lovers as proof that their pets can do more than blow bubbles. "They are totally misunderstood," said Karen Youngs, the editor of Practical Fishkeeping. "We know from our readers that fish can recognise their owners, and some will go into a sulk if someone else tries to feed them."

Mrs Youngs added that the research may mean that fish-owners have to make their aquaria a bit more interesting for their occupants: "We know that fish such as Oscars do enjoy having a table-tennis ball to bash about."

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BERT STERN - AN OBITUARY

By John Grainger

Bert Stern was born in London on April 16th 1920. He and his younger sister were brought up by their father and their grandparents.

At the start of the war he was an ambulance driver, and met his future wife who was working in the same first aid station. They married when he was called up to join the Buffs. He served for a while with the coastal defences in Devon. Then his regiment went overseas and he saw service in North Africa, Sicily and Italy. It was here that he earned a Military Medal for evacuating a number of casualties whilst under heavy machine gun and mortar fire. Later he was injured and captured in No Mans Land with a patrol and spent the rest of the war in a prisoner of war camp in Germany.

After the war he re-enlisted in the forces and served another 3 years. On his return to the UK his marriage broke up before the birth of his second daughter. He remarried but this marriage also ended in divorce. He did various jobs before joining Group 4 for some years and then becoming a Security Officer with Debenhams in Oxford Street. It was here that one of his cousins recognised him and he re-made contact with his family. A few years later he was reunited with his two daughters, who by now were both

married with children of their own.

Bert retired in 1985 and was able to devote more time to his tropical fish, attending fish shows all over the country and winning many shields and certificates. At that time he was still living in London in a flat in Crouch End, but his health began to deteriorate, and in 1991 he moved into sheltered accommodation in Watford to be near to his daughter.



Bert & his daughter, Jean

It proved to be a good move. He had been rather lonely in London, and at Swanston House he had

more of a social life. He went down for afternoon tea some days, and enjoyed the meals. He rarely missed the Tuesday Bingo sessions, and went on one or two outings. At first he sometimes popped down into Watford, and when he discovered that the Moon under the Water did a bargain Sunday roast for 2 he found someone to share it with him. He went shopping to Sainsburys with one of his daughters once a fortnight for a few groceries and walked to the local shops.

In the last few months he became less mobile. He had always been very thin, but he seemed to lose even more weight and was eventually admitted to hospital on May 20 and died peacefully the following morning.

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MEMORIES OF BERT STERN FROM A FISH KEEPER'S POINT OF VIEW

By Adrian Dempsey

Bert's involvement with the FBAS began with the founding of Haringey AS in the late 70's at the Scout Hall in Park Lane, Hornsey. He was one of their founder members and a Committee member, taking on the Treasurers role. His interest in fishkeeping having started some years previous when he exchanged his Green Shield stamps for his first aquarium.

Bert quickly became interested in the showing side of the hobby, travelling with Tom Laughlan, John Taylor and Adrian and Sheila Dempsey. On those occasions that no other club members travelled, he went by bus and train, pulling a shopping trolley with his fish and tanks, travelling as far as Northampton and often returned with trophies as well. In later years Bert travelled around in his three wheeler. Bert always took great delight in winning, always taking the trophy and always returning the next year to defend his title.

These trophies decorated his Ferne Park flat among his many tanks, and marked his many successes in the Danio, Swordtail, Platy, Catfish and Corydoras classes with the occasional coldwater winner from his pond. He also enjoyed success in the specialist societies he supported, notably CAGB.

It was through Haringey AS that Bert found a part time job servicing aquariums and through this connection, "Fish Delight" - a granular fish food and fore-runner to Promin was introduced to the hobby with the delightful sales pitch "Bloody Good stuff this - Have you tried it?"

Bert stayed with the move of Haringey AS into their new home of the Crouch End Recreation Centre - the venue of their last Open Show when Bert even took on the Open Show Sec's role - and onto the merge with Thames AS when membership of both societies faded in the 90's.

I don't recall Bert ever challenging a judges decision typical of the gent he was.

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Cory Cats

by Darryl Wright ('Fryguy'), of San Antonio, Texas.
In honor of my favorite fish...
The 'Corydorasables'

Tiny little whiskers,
upon a pudgy face,
so restlessly exploring,
each and every place.
Sifting sand and sniffing rocks
constantly inquiring --
"Is there some treat for me to eat?
A morsel I'm desiring!"
Another lap around the tank,
to rummage through your lair,
and then a dash straight up above,
to grab a gulp of air.
Armored plates defend your flank,
and camouflage does hide you,
but still more easily you rest,
with several friends beside you.
Each time I have you figured out,
and all I have discovered,
another one unknown to me,
is suddenly uncovered.
So many shapes and sizes,
Stubby, short or squat,
and colored as the rainbow,
with stripe or bar or spot,
Your legendary cuteness,
no other fish can boast,
and to your personality
I raise a well earned toast.
I gaze upon your dwelling place:
Of all the fish I see --
'Tis you and you alone I find,
that means the most to me.

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Great Salt Lake Aquarium Society

MEGA PARASITES

By Dr Peter Burgess, Aquarian Advisory Service
email: AquaticsDoctor@aol.com

Out of sight...

The vast majority of fish parasites are never directly seen by the fish-keeper. Either they are too small to be resolved with the naked eye, or they spend their lives out of sight inside the fish's body. The latter include the tapeworms that reside as adults within their host's gut or as larvae within its body (peritoneal) cavity.

Skin-dwellers

There are, however, a few skin-

dwelling parasites that are large enough to be seen without the aid of a magnifying lens or microscope, the three common ones being: anchor worm, fish louse, and fish leech. Their major features are shown in the table.

These three 'mega-parasites' are mostly encountered on coldwater fish, such as goldfish and koi. But occasionally, tropical aquarium fish are found to be harbouring anchor worms or, more rarely, fish lice or leeches.

PARASITE	SHAPE	SIZE	COLOUR
Anchor Worm (<i>Lernaea</i>)	Very thin and worm-like, resembling an acupuncture needle in the fish's skin. Anchor worm produces a pair of egg-sacs which give the parasite an overall Y or T shape.	Up to 12 mm long	Pale, semi-translucent
Fish louse (<i>Argulus</i>)	Flat, disc shaped.	Between 5 - 12 mm diameter	Green to grey and slightly translucent
Fish leeches (<i>Hemiclepsis</i> and <i>Piscicola</i>)	Worm-shaped. Leeches have a small disc-like sucker at the head end and a much larger disc sucker at the rear end.	<i>Hemiclepsis</i> up to 30 mm long; <i>Piscicola</i> up to 80 mm long	Pale yellow to green (<i>Hemiclepsis</i>) or dark green and white geometric banding pattern (<i>Piscicola</i>)

TABLE: Large skin parasites - identifying the big three.

Temporary parasites

Fish lice and fish leeches are called 'temporary parasites' because they usually leave their fish host after feeding. After detachment, they swim in the water, eventually settling on the pond base or among aquatic vegetation.

The fish louse (*Argulus*)

Despite its common name this parasite is not a true louse but a type of crustacean (crab and shrimp family), belonging to the genus *Argulus*. Outbreaks of fish lice tend to be seasonal, occurring in the spring and summer months, their numbers

dwindling as winter approaches.

Although quite large, the fish louse can be surprisingly well camouflaged on its host's skin, and is sometimes mistaken for a dislodged scale. Using a magnifying lens you may see the parasite's two beady black eyes and its pair of circular suckers used for attachment. Where just a few *Argulus* are present the fish may show no obvious symptoms, but at higher infestation levels affected fish may repeatedly flash (rub its flanks against submerged objects). Severely infested fish become listless and their skin surface may take on an opaque appearance (A slimy skin) due to over-production of mucus in response to the irritating parasites. Their fins may become frayed. The parasite's bite wounds may become inflamed, resulting in small red spots on the fish's skin.

Treatment

Attached parasites can be removed manually, using tweezers. Dab the exposed wounds with antiseptic (e.g. from your koi supplier or vet) to reduce the risk of secondary infections. If fish lice become established and reproduce in the pond, they will likely cause recurrent outbreaks each summer. Under such circumstances it may be necessary to chemically treat the whole pond in order to eradicate the adults as well as the tiny larvae and eggs that occur in the water or on the substrate. Visit your pond or koi supplier for suitable treatments. The eggs of *Argulus* are resilient to chemical treatments hence two or three doses of the treatment may be necessary in order to destroy the larval stages as they

hatch (refer to the manufacturer's instructions for recommended treatment intervals). Before buying coldwater fish scan their skin surface for any attached fish lice or red bite wounds. Even if the specimen you desire is free of parasites, do not make a purchase if any of its companions are infested; there could be invisible larval stages on all the stock or in the water. It pays to quarantine new fish before introducing them into your main pond or aquarium.

The anchor worm (*Lernaea*)

This is not a true worm, but a type of parasitic crustacean (hence distantly related to the fish louse), belonging to the genus *Lernaea*. The species most likely to affect koi and goldfish is *Lernaea cyprinacea*. Anchor worm is more of a problem on newly imported fish. Once established in the pond, it can be a recurrent summer problem, preferring warm temperatures (22 - 28°C) and does not develop much below 15°C. The adult stage on the fish's skin is the female parasite.

Despite her visible size, the female anchor worm is not always easy to see, especially when attached to pale coloured skin. Adult anchor worms may occur almost anywhere on the fish's body surface, but often show a preference for the upper body - so inspect here first. Also check your stock for any small inflamed ulcers that could indicate where anchor worms have previously attached. Fish that are mildly infested with anchor worms may exhibit no obvious symptoms, although the feeding parasites can cause the fish to flash. Heavy infestations are far more serious and badly affected fish

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Fish Louse (Argulus) Eggs

may become listless and highly prone to secondary bacterial and/or fungal infections. The tiny parasitic larvae are also a problem as they graze on the fish's gills. Large numbers of larvae may cause the fish to experience breathing difficulties, manifesting as fast gill beats and gulping at the water surface. Very young fish can die of a heavy gill infestation.

Treatment

Adult anchor worms can be removed manually using fine tweezers. It may help to dab the parasite with some alcohol (eg neat gin, vodka) to relax its grip. Grasp the parasite firmly near its point of attachment and pull quickly. Apply an antiseptic ointment to the wound. Even if all the adult parasites are removed there may still be invisible larval stages in the water or attached to the fish's gills. Hence, the whole pond or aquarium may need to be treated in situations where anchor worm is a persistent or recurrent problem. Organophosphate treatments are effective but their use is restricted -

consult your pond dealer or vet.
The fish leeches (Hemiclepsis and Piscicola)

If you discover leeches in your pond, don't panic! In all probability they are harmless species that do not attach to fish. The only two fish-parasitic leeches of importance in the UK are *Hemiclepsis* and *Piscicola*. Distinguishing between fish-parasitic and harmless leeches is not easy. Absolute proof of a fish leech problem generally relies on seeing one or more leeches clinging to the fish. Fish leeches attach to any part of the body, including the gills and mouth cavity. Fortunately, fish leech infestations are generally mild and typically only one or two fish may be carrying leeches at any one time. In rare situations where fish are heavily leech-infested they may lose significant amounts of blood and become weakened and lethargic due to anaemia. Once established, fish leeches will stay in the pond year-round and multiply between early summer and autumn. They can survive off the fish for up to 3 months.

Treatment

Attached leeches can be persuaded to release their grip by immersing the

Fish Louse (Argulus)



affected fish in a 3 per cent solution of sodium chloride for up to 30 minutes. Needless to say, this treatment should only be performed on salt-tolerant fish species. Dab the bite wounds with an antiseptic. Eradicating fish leeches from the pond is not so easy. A few commercial anti-leech treatments are available from specialist koi and pond fish outlets. Organophosphates are effective but these chemicals must be used with extreme caution. To complicate matters, the leech's egg cocoons are relatively impervious to chemical treatments. Also, the cocoons may take weeks to hatch. As a result, one or two repeat treatments may be required to kill the freshly hatched leeches. In severe and persistent leech infestations it may be necessary to completely empty the pond and allow it to remain thoroughly dry for a few days. Thorough drying will kill both the adult leeches and their cocoons. All aquatic and marginal plants must either be destroyed or treated with two or three doses of a suitable anti-leech treatment. In terms of prevention, leeches are only rarely encountered on fish for sale, as any attached leeches will likely have been detected and removed at the dealer's premises. Nevertheless, always perform a visual 'body-check' before purchasing stock.

Damaged caused by large skin parasites

Anchor worms, fish lice and fish leeches all puncture the fish's skin in order to feed on its blood or skin cells. These parasites secrete digestive enzymes and/or anti-coagulants into the bite wound, to aid feeding. These secretions may irritate the fish, causing it to jump or repeatedly flash. The

sharp appendages of fish lice may cause further skin damage as the parasites crawl over the fish's skin.

Anchor worms use their head region for attachment, and this involves a special organ, known as the holdfast, which penetrates deep into the fish's skin. Anchor worm infestations may cause localised damage to the skin and underlying muscles, resulting in tissue necrosis (tissue death), inflammation and sometimes bleeding.

The skin damage inflicted by these parasites is vulnerable to attack by fungi or bacteria. These so-called 'secondary' fungal and bacterial infections must be promptly treated using a fungus or bacteria remedy, otherwise they may spread and cause further harm to the fish.

Some of these parasites are capable of transmitting diseases via their bite. For example, *Argulus* is known to transmit the highly dangerous virus that causes spring viraemia of carp (SVC), though fortunately this viral disease is rare in the UK.

Organophosphate treatments

Organophosphate chemicals were once used widely to destroy fish lice, anchor worms and leeches. However, their use in the UK is now very restricted due to their toxicity to man and wildlife and their extreme persistence in the environment (these chemicals take years to break down). Diflubenzuron inhibits larval development in fish lice, thereby preventing the larvae from reaching sexual maturity. Seek expert advice before using such medications.



NEW PRODUCT

PRESS RELEASE

12/04/04

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Water Garden Pumps

BLAGDON - "The Pond Masters" have strengthened their range of water garden pumps within the innovative Hydratech Torrent Water Garden Pump range.

The existing Hydratech Torrent range has recently grown with the launch of the Hydratech Torrent 3,000 and 4,000. Brimming with unique design features that add to an already comprehensive stable of water garden products, the Hydratech Torrent range is ideal for use with filtration systems and waterfalls. It offers supreme reliability, high flow rate, lift height, ease of use and all at a low running cost.

The filter pump is like the heart and lungs of the pond, pumping the oxygen giving water to all the additional systems. It needs, therefore, to be reliable and economical to run, as it never stops pumping.

Pond pumps intended to run waterfalls and filters need to move large amounts of water, at a high flow rate, and lift the water above the pond to reach a waterfall. Due to its unique impeller system and powerful motor, the Torrent has the ability to move pond water through a filter and up to a waterfall, and move large pond waste without blocking or slowing down the flow. The impeller's unique design enables the unit to provide continued high lift, and due to a low wattage motor, it is inexpensive to run.

To compliment the unique impeller design, the advanced pond floor intake

system actively sucks up and moves pond waste up to 5mm handling, making it the most suitable pump to use with a filter, resulting in a clean, healthy pond and a constant flow of water.

The Torrent is up to twice as powerful as many alternative pumps under pressure. Others just don't meet the mark. The traditional Sump Pump lacks reliability and is expensive to run. Caged solid waste systems lack the flow rate and lift. There is no longer a need to compromise. The Hydratech Torrent provides the entire solution. This is all offered by Blagdon at a very competitive price.

As would be expected from a trusted manufacturer such as Blagdon - The Pond Masters, each Hydratech Torrent comes with a 3 year manufacturer's warranty.

The Hydratech Torrent is the perfect companion for Blagdon's Cyclone pressure filter and would be the ideal pump to use with any waterfall from Blagdon's stunning range. The above combination would create a beautiful, low maintenance and healthy water garden.

There are five pump sizes in the Torrent range, 10,000E, 8,000E, 5,500, and the new 4,000 and 3,000. All five are ideal for use with filtration systems and waterfalls. The superior lift and performance offered by the pump, in conjunction with its waste handling capabilities, make it the ideal choice for any water gardener's pumping needs. The two newest additions to the Hydratech Torrent family are ideally suited for the smaller pond.

Hydratech Torrent pumps offer excellent value retailing at £109.99 for the 3000 model and £129.99 for the 4000 model.

Complete your water garden system with the Hydratech Torrent Pump range from Blagdon -The Pond Masters.

Ask your aquatic retailer for a demonstration, Or for more information on this or any other Blagdon products, please write to:

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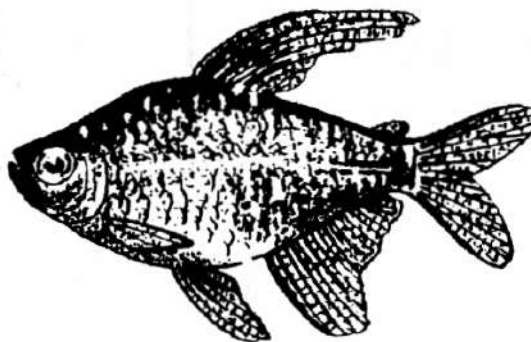
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KNOW YOUR FISH

Diamond Tetra - *Moenkhausia pittieri*



Common Name: Diamond Tetra

Scientific Name: *Moenkhausia pittieri*

Where found: South America: Environs of Lake Valencia in Venezuela.

Characteristics: Body and fins as illustrated, basic body colour is a brassy yellow, shading is darker towards the dorsal contour, lighter on the belly. On some specimens a darkish lateral line commences below the dorsal fin, terminating on the caudal peduncle. In older fishes this line sometimes tends to disappear, being replaced with a sparkling intermittent line commencing behind the operculum. The whole of the body is sprinkled with metallic markings. The upper part of the iris of the eye is red. Fins are clear to very pale violet, the dorsal, caudal and anal fins have white tips and / or margins.

Remarks: The body of *Moenkhausia pittieri* is laterally compressed and the dorsal, anal and pelvic fins are extended, especially in the male.

FBAS Show Class: 'C'

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REIGATE & REDHILL LOSE ALF

As you can see from this picture, Alf Gardner was one of those who liked to get really stuck into any job. He was a tireless attendee at all the major London aquatic Shows such as those held at the RHS Horticultural Hall at Vincent Square and at Alexandra Palace. It was at the latter venue where he had the misfortune to gash his arm rather badly on a cover-glass and had to seek medical attention - but you can equally see that it didn't dampen his enthusiasm!



Alf Gardner 1922 - 2005

Federation Yellow Badgeholder Alf was a member of Reigate & Redhill for many years, their Chairman for a good proportion of that time and became a Vice-President when he 'retired' although he kept in touch, and was usually seen each year as the Society - along with S.P.A.S.S and Hounslow & D.A.S. members - gathered each year for a Sea-Hunt at Peacehaven where Alf lived.

collect anything and everything living and bring to him for examination. But there was more to Alf than these simple pleasures.

He studied at Universities at Paris and Heidelberg, acquiring fluency in both French and German along the way. As an engineer, he worked with Landing Craft in Scotland during the war and here his affinity with Nature served him well.

The nearby American servicemen had plenty of ham but no

eggs for breakfast so Alf took off in his Landing craft to a remote island and came back loaded with eggs - seagull eggs! One day on patrol he also spotted a Basking Shark and shifted into top gear to investigate. The resulting hole in the landing craft's hull was later put down to a 'submerged log' rather than disclose the real participant in the inevitable collision.

It was a perfect Spring day on which he said farewell to Alf - he couldn't have arranged it better - and it is fitting that his ashes will be scattered on the Sussex farmland where he derived so much pleasure from life. Alf has returned to his beloved country environment.

Alf would take it as a compliment if you described him as a 'Son of the Soil' as he was completely at one with Nature. Anything that moved in the air, on land and, of course, in water grabbed his attention. The eulogies at his funeral described how his children would

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NEW TETRA POND PRODUCTS FOR 2005

Rupert Bridges, Tetra Information Centre

With the pond season upon us, we are all hoping for better weather in 2005 after an appalling summer last year. After all, spring and summer is when we make the most of our ponds - relaxing by them on warm evenings and enjoying the diversity of wildlife they draw to the garden. To help you get the most from your pond this year, Tetra has developed a number of new products designed to keep your fish in top condition:



TetraPond Treats

All fish enjoy some variety in their diet but until now there has been little in the way of treat foods available for pond fish. The development of TetraPond Treats changes this, offering a carefully formulated treat that will introduce variety into the diets of all pond fish. In addition, TetraPond Treats have been specially designed so they can be handled to fish, therefore increasing the enjoyment that pond owners get from

feeding. TetraPond Treats contain natural attractants such as shrimp and orange to ensure fish really enjoy eating them, and they are enriched with essential nutrients to make them more nutritious compared to traditional pond treats such as bread or lettuce.

TetraPond Goldfish Mix

Launched in spring 2004, TetraPond Goldfish Mix proved to be one of the major hits of last pond season. TetraPond Goldfish Mix is the only food specially formulated for goldfish and their varieties kept in ponds. Until its launch many pond owners had to feed aquarium goldfish flakes, which are not ideal for outdoor feeding due to lower temperatures. Goldfish Mix contains a premium blend of spirulina-enriched flakes, four different sticks, and freeze-dried shrimp, to ensure goldfish get a varied and complete diet. TetraPond Goldfish Mix will keep goldfish, shubunkins and comets in excellent health and colour throughout the pond season.

TetraPond PFX Pressure Filters

Tetra's range of CPX and OFX pumps have quickly gained a reputation for being robust and reliable, and requiring very little maintenance compared to other models. To complement this range, Tetra has now launched a pressurised filter designed around the same principals - the TetraPond PFX series.

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A large, robust design and powerful UV lights means that the PEX range delivers superior performance compared to many other brands of pressurised filter.

TetraPond QuickTest 5 in 1

A big hit in 2004, the TetraPond QuickTest 5 in 1 dip test is an ideal way to rapidly check the quality of pond water. A single strip tests nitrite, nitrate, pH, KH (carbonate hardness), and GH (general hardness), all within 60 seconds. They are ideal for regular testing, or for situations where there isn't time to conduct liquid tests (for example when transporting or showing fish). As with all TetraPond Tests, the 5 in 1 strips are accurate, reliable and easy to use.

Being pressurised means that the filters do not have to be placed at the highest point in the system. Instead they can be placed anywhere between the pond and the top of the waterfall / return. They have been designed to be highly efficient at maintaining excellent water clarity and quality, whilst being simple to use and maintain with a one-touch backwash facility. There is separate biological and mechanical media for improved filtration, and there is minimal loss of flow from the pump as water passes through the unit.

Available as a non-UV (PEX) and UV-inclusive unit (PEX-UV), there are three sizes of filter: 5000 (for 5000 litre ponds), 8000 (for 8000 litre ponds) and 12000 (for 12000 litre ponds).



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(All available except V.25; some titles amalgamated on to single DVD)

Note the letters TSS after a title denote a transcribed slide show rather than a 'movie'.

V.18 FISHKEEPING THROUGH THE MILLENNIUM (G)
Relive the Blue Planet Aquarium, Ellesmere Port, Cheshire and enjoy coverage of the Hagen miasers', British Open and all other entertaining activities. 37 minutes.

V.19 HOME FURNISHED AQUARIUMS (G)
Accompany Malcolm Gosse as he tours around judging Hounslow members' home furnished aquariums. Will you agree with his verdicts? 54 minutes.

V.20 CENTRAL AMERICAN CICHLIDS (TSS) (G)
John Ligan, Port Isabel A.S. has taken many Best in Shows, FBAS Championship Trophies, FBAS Gold Brooches and even a Supreme Championship Recorded at the March FBAS General Assembly 2003. John 51 minutes (ALSO AVAILABLE ON 3 PROGRAMME DVD WITH V.22 AND V.30)

V.21 AQUARIUMS AROUND THE WORLD (G)
Dick Mills has compiled European, American, Chinese, Malaysian and Australian venues plus an exotic Atlantic Island - there's a surprise 'non-fish' appearance at the conclusion. 62 minutes.

V.22 MY TWENTY FAVOURITE FISH (TSS) (G)
Alan Stevens, a practising fishkeeper for over 40 years and 24 years as a Judge, names his favourite twenty fish. He announces his actual 'favourite' at the very last minute - these Judges, they always keep you waiting! Recorded 'live' at the FBAS September General Assembly 2003. 41 minutes (ALSO AVAILABLE ON 3 PROGRAMME DVD WITH V.20 AND V.30)

V.23 ATLANTIC FISHES & FLOWERS (G)
Apart from its aquarium, this perfect Atlantic island retreat, well-patronised by British holidaymakers has other attractions - wonderful flowers that bloom all year round, picturesque villages, miles of walks amidst great scenery. Where else can you get a proper cup of tea after a sledge ride? 46 minutes.

V.24 AQUATIC SCULPTURES IN WOOD (G) (TSS plus live video)
If you've been around the Shows, especially in northern areas, you are bound to have come across some of Brian Walsh's marvellous wood sculptures. Apart from appreciating the final result, you may have wondered how he goes about producing these masterpieces. This video reveals all - but there are one or two secrets that Brian won't divulge! Recorded 'live' at the Festival of Fishkeeping 2003. 51 minutes.

V.25 UNDERSTANDING FISH HEALTH (G) (TSS plus live video)
Follow the advice in this two-part video by Aquarian's Dr Peter Burgess and you'll be able to sit back and enjoy all that's best in fishkeeping. Includes separate 'Question Time' session. Recorded 'live' at the Festival of Fishkeeping 2003. 58 minutes. (NOT AVAILABLE ON VCD OR DVD)

V.26 BASIC POND CARE (G) (TSS plus live video)
Capturing the needs of a pond throughout the entire year is the task Rupert Bridges, of Tetra, set himself in this video. Dealing with maintenance and advanced care for the pond, his advice will take much of the worry out of water gardening. Recorded 'live' at the Festival of Fishkeeping 2003. 59 minutes.

V.27 FIREMOUTH & OTHER THORICHTHYS (TSS) (G)
The Firemouth has been an aquarium favourite for many years. Juan Miguel Artigas Aziz has studied this fish and members of its genus, *Thorichthys*, in their mutually native home of Mexico for many years. Mexico is a country of beautiful scenery - with just as attractive fishes. Recorded 'live' at the Festival of Fishkeeping 2003. 80 minutes. (AVAILABLE AS A DOUBLE PROGRAMME DVD WITH V.28)

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V.28 GOODIEIDS OF MEXICO (TSS) (G)
The Family Goodieidae is naturally found in Mexico, so who better to describe the members of this unique group of livebearing fishes than another 'native' - Juan Miguel Artagas Azil? Recorded 'live' at the Viviparous Society, Convention at Festival of Fishkeeping 2003. 78 minutes.
(AVAILABLE AS A DOUBLE PROGRAMME DVD WITH V.27)

V.29 AQUARAMA 2003 (G)
Every two years, Singapore plays host to Aquarama presenting a shop window for South-east Asia's top fish exporters and breeders. Visitors also get a chance to see fish farms and other Singaporean attractions such as the Chinese, Botanic and National Orchid Gardens. 48 minutes.

V.30 NOT ONLY HOSTAS, BUT ALSO (TSS) (G)
Although the *Hosta* might be thought to be an ideal pond-side plant, Mike Shadrack begs to differ but still comes up with some stunning pond pictures and ideas for creating that special bog-garden area around your pond. 39 minutes
(ALSO AVAILABLE ON 3 PROGRAMME DVD WITH V.29 AND V.22)

V.31 MAINTAINING AQUARIUM EQUIPMENT (G)
Even the most reliable equipment depends on regular maintenance. If you've never what's inside the works of filters, air-pumps and the like then here's your chance to learn without doing your own equipment too much damage in the process. 64 minutes

V.32 FAR EASTERN DELIGHTS (TSS) (G)
Who better to cast his eyes over the Goldfish in Hong Kong's Goldfish Pagoda and the shops in the Mong Kok area than Paul Denham of the Goldfish Society of Great Britain? He also visits fish farms, Singapore and its Sentosa Island before having a final rest in the Maldives! 64 minutes

V.33 PONDS, PONDS, PONDS (G)
Houslow's roving cameras take a look at a number of ponds, ranging from the small to the 'I wish I had room for that in my garden' size. See the different ideas that fishkeepers have come up with when adding 'water effect' to their gardens. 61 Minutes

V.34 BRACKLESHAM - THE MOVIE (G)
Relive all the excitement of the Festival of Fishkeeping 2004. See how the Holiday Village is transformed into a spectacular aquatic event; watch how all the effort put into creating this annual weekend event makes it the success it is. 49 minutes

V.35 FISH FOODS AND THE AQUARIUM ENVIRONMENT (TSS) (G)
Tetra's Rupert Bridges explains not only how food affects the fishes' well-being but also how it can have knock-on effects upon the aquarium's environmental conditions. Recorded live at Festival of Fishkeeping 2004. 37 minutes

V.36 FRANKLIN'S FOOD FAYRE (in preparation) (G)
Eric Franklin presents a very full menu of foods suitable for fish - of all ages and all sizes, from fry to Koi!

V.37 AN AMERICAN VIEW OF LIVEBEARERS (TSS) (in preparation) (G)
Bob Cahlin presents some interesting livebearers. Recorded 'live' at Bristol Tropical Fish Club.

PROBLEM POND PLANTS - Managing algae, duckweed and other floating plants.

Floating plants, like duckweed, blanket weed and the alien floating species Water Fern (*Azolla filiculoides*) can be particularly problematic in ponds.

Moderate amounts of filamentous algae ('blanket weed') and duckweed should not be a cause for concern however. Both occur naturally in ponds with good water quality and filamentous algae, in particular, often support large numbers of small animals. There are even tiny aquatic beetles which live out their lives within the duckweed fronds.

Before doing anything drastic, also make sure which duckweed is present - there is a chance you might have Fat Duckweed (*Lemna gibba*) or Great Duckweed (*Spirodela polyrrhiza*) both of which are quite uncommon plants and worth protecting. If you live near the Somerset Levels or the south Kent coast you may see Rootless Duckweed (*Wolffia arrhiza*) - at 1 mm in diameter and looking like a green grain of sand, it's Britain's smallest flowering plant and one of the rarest!

Most people will, however, have Common Duckweed (*Lemna minor*), or increasingly perhaps the newer alien species, Least Duckweed (*Lemna minuta*), which looks very similar.

The problems with algae, duckweed and water fern really begin when these plants start to form thick surface mats across the water surface. To most people these mats look unsightly. Where the mats are thick they can also

be treacherous because they may look like solid ground to children and animals. The surface cover can also cause problems for wildlife, both because it blocks out light to submerged aquatic plants and because it prevents exchange of gases with the air so that the underlying water can become de-oxygenated and noxious to aquatic animals.

What causes the problem?

The underlying cause of blooms of duckweed, algae and water fern is almost always too many nutrients (especially nitrate and phosphate) in the water. These floating-leaved plants are very tolerant of nutrients and where levels are high they can enjoy unrestricted growth.

New ponds or ponds that have recently been dredged often have temporary algal or duckweed blooms which persist for a few months. These occur because disturbance to the soil temporarily releases nutrients into the water. Such blooms are usually short-lived, and should cause little worry, since the system will settle down within a season or two.

Older ponds with a long-lived surface cover of plants are of more concern since they often indicate some form of persistent nutrient pollution. The causes are usually one or more of the following:

- fertiliser applied to fields or gardens which leaches into the pond;
- runoff from bare or disturbed soils;



Floating leaved plants provide excellent cover for pond animals

- duck or livestock faeces;
- addition of food stocks, such as bread or corn to encourage ducks or feed fish;
- nutrients in the water supply (e.g. stream inflows or topups with tap water);
- sewage, silage or farmyard run-off;
- runoff from urban surfaces such as roads and pavements.

Anything that continually stirs up bottom sediments will also increase the release of nutrients from the pond's sediments into the water - this includes bottom-feeding fish and ducks.

Managing Algae, Duckweed and Other Floating Plants.

Unfortunately, dealing with nuisance plants can be difficult - particularly at sites larger than garden pond size. The best option is to tackle the underlying problem of nutrient enrichment. Other methods are less satisfactory because they only deal with the symptoms. Increasing shade or adding barley straw

can, for example, suppress algal growth (see below), but the 'treatment' will need to be continued indefinitely and neither are very effective at inhibiting duckweed.

Short Term Solutions.

In the short term, with small ponds, blanket weed can be temporarily cleared using a rake or by twisting it on a stick. Duckweeds and Water Fern can be similarly scraped from the surface using a board or a sieve. This not only removes the plants but also takes out some of the nutrients that are locked-up in the plant tissues.

Regular removal of floating plants should gradually reduce nutrient concentrations in the pond. However, it can be soul-destroying work at larger sites and, if nutrients are still getting into the pond from other sources, it will not solve the problem.

Ensuring that there are extensive areas of wet organic soils and marsh plants around the pond edge can get rid of some nitrate in the pond. This is because these areas are excellent at transforming (denitrifying) nitrate into nitrogen and oxygen gases which can disperse to the atmosphere.

Maintaining submerged aquatic plants will help soak-up the nutrients before the nuisance plants can get hold of them. Beware though - most native submerged plant species will not grow in polluted water - so only think about adding them when other methods, such as dredging, have been used to clean up the water quality. Even then, submerged plants can be difficult to



Duckweed can cover a pond very quickly in nutrient rich conditions

establish - so try small amounts first to see if they are likely to survive. When adding plant species to ponds, use only native species, ideally from a nearby source. Where possible avoid stock from garden centres since the origin of the plant material is not usually clear and, in some cases, the stock may be contaminated with fragments or seeds from invasive alien plant species.

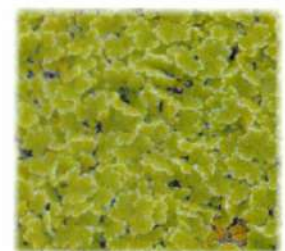
Long Term Solutions.

In the long term, the best solution is likely to be a combination of both (i) removing bottom sediments from the pond - since these store nutrients and (ii) minimising the amounts of any further nutrients going into the pond.

Does Barley Straw Help Get Rid of Algae?

As a temporary solution, it is possible to try adding barley straw to get rid of algae. For garden ponds barley straw can now be bought from garden centres ready netted up into small bags. The

method works because chemicals released as the straw rots down act as a natural herbicide and kill the algae. The problem with this method is that it is a 'quick fix' - it doesn't get rid of the underlying nutrient problem - so the pond may continue to have problems in the long term. We have, for example, seen village ponds where barley straw was used successfully to get rid of algae - but the next year the pond was covered in a sheet of duckweed instead!



Dense growths of Water Fern (Azolla filiculoides) are usually a sign of severe phosphate pollution.

Interestingly, some new information shows that rotting tree bark may be as good as barley straw at getting rid of algae (tannins from bark may be the controlling chemical) - a good reason for leaving fallen branches in the water. Willow is particularly effective.

SOUTHEND, LEIGH & DIST. OPEN SHOW

By Liz Clayton Jones & Dr Peter Burgess
Photos by Liz Clayton Jones

SLADAS held their annual Open Show on Saturday May 7th 2005 in Southend. The society hosted the Champion of Champions finals and announced the winners of the 2004 National Show League.

There was a fantastic turn out with over 400 top fish exhibited and plenty of interest from the general public.

Open Show fish competition

The highest pointed fish (Best in Show) was an unusual species of African *Hemichromis* cichlid (closely related to the popular Jewel cichlid), known as "Hemichromis species Guinea 1".



Best in Show

Champion of Champions

The Champion of Champions is a competition between the top prize-winning fishes in the country. The 2004 competition was won by AQUARIAN Leading Aquarist John Egan (Port Talbot Aquarist Society) with his American rainbow darter.

2004 National Show League

The show was also the forum for the



John Egan (Top) and Roy Chapman Receiving their prizes

announcement of the country's top prize-winning fish exhibitors of 2004. In order: 1st - Roy Chapman, LA (Southend Leigh & DAS); 2nd - "KPG" - including Paul Brown; 3rd - Gavin Cowan, LA; 4th - Brian and Steven Chrich and Ian Wright, LAS; 5th - John Egan, LA. Hence, AQUARIAN Leading Aquarists swept the board!

Prizes were handed out by fish health expert, author and lecturer Dr Peter Burgess, of the Aquarian® Advisory Service. All prize winners won AQUARIAN flake food. Winners of the C of C and Show League were additionally presented with RENA xP external filters.

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THE FAMILY DORADIDAE - TALKING CATFISH

By Chris Ralph

This original article was first published in *Practical Fishkeeping* magazine.

There are a number of catfish that belong to the family Doradidae, sub-family Doradinae. Quite often these fascinating catfish are referred to as 'Doradids', 'Dorads', 'Talking Catfish', 'Thorny Catfishes' and other names, which cannot be mentioned, as they are too rude! This group of catfish are found throughout South America. There are small doradids and large doradids commonly offered for sale at most good aquatic retailers. The problem with some of the larger species such as *Oxydoras niger* (Pseudodoras niger - Mother of Snails Catfish/Black Doradid) and *Pterodoras granulosus* (Common Bacu) is the fact that they would soon outgrow a 72" x 24" x 24" aquarium and are therefore not ideally suited to life in an aquarium unless you can provide a large enough aquarium or tropical pond to house them in. As I do not wish to encourage any unsuspecting aquarist to keep large catfish I will concentrate this article on some of the smaller representatives of this family of fish. Those of you that know me will already be aware that this family of fish is perhaps my favourite, as I am unable to resist walking past a dealers tank without looking to see what doradids lurk behind the décor.

Why are they referred to as 'Talking Catfishes'? I hear you ask? I will now attempt to answer this question. Doradids have two ways in which they can produce 'Talking Sounds', which subsequently gives them their common name. The first way of communicating sound is by the fish partially locking their pectoral fins in their sockets, and

then the action of moving the fins the fin spines grate against the socket producing the sound. The second way, in which these fish produce sound is via a mechanism known as the 'elastic spring mechanism', there is a muscle that is attached to the rear of the fishes skull at one end and to the anterior of the swimbladder at the other end. The fish is able to quickly contract and relax this muscle and as a result it can make its air filled swimbladder resonate to produce sound. These catfish use these methods of communication as a means of self-defence against would be predators and also as a way in which they can find conspecifics in its natural environment (or aquarium). The doradids can also be described as narrow-breasted or broad-breasted. The narrow-breasted species tend to have feathered barbels a characteristic that the broad-breasted species do not possess. With the broad-breasted species the width between the base of the pectoral fin spines tends to exceed the length of the head.

One of the main features of this family of catfish is the fact that they possess bony projections along the lateral length of their bodies. These bony projections are known as 'scutes', which are very sharp just like thorns. These scutes give this family of catfish an almost prehistoric look about them. Care should be taken when removing these fish from an aquarium as they all too often get themselves snagged up in nets. When these catfish are frightened they immediately lock their pectoral and dorsal fin spines erect. These fins have serrated edges and when locked makes

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the fish safe from would be predators. If nets have to be used then they should be very fine meshed in order to prevent the scutes and fin spines from penetrating it. Some aquarists prefer to pick these catfish up by their dorsal fins taking care not to get their fingers trapped between the pectoral fins and the scutes on the body of the fish, as believe me this can be a very painful experience! If you can use a plastic container or a plastic bag in which to chase the fish (this is perhaps the best way of removing the fish from the aquarium). When removing the larger species it is perhaps best to wrap the fish in a bath towel(s) and lift it out of the water (this tends to be a two person job one lifting the head end the other the tail end taking care not to cut your hands on the razor sharp scutes).

The ideal set-up for these catfish would be an aquarium with a sand substrate such as BD Aquarium Sand or fine gravel. Décor should include bogwood in which the catfish will hide, smooth rocks to avoid damaging the bodies of these fish. Some aquarists use plastic or clay pipes for their catfish to hide in, if these materials are to be used please ensure that they are large enough to allow the catfish to be able to get out of. I have known a number of people to lose their catfish as they have become too large to get out of the pipe and they have subsequently become stressed and died. Wherever possible use large diameter pipes if they are to be used. I would personally recommend an aquarium that is at least 36" x 15" x 12" in order to keep these catfish satisfactorily. The ideal water conditions are pH 6.5-7.5, temperature in the range 22-26°C or 72-79°F and dH up to 15°. These catfish thrive on a mixed and varied diet that

includes sinking catfish pellets, granular foods, flake, tablet foods, aquatic snails, shredded prawns, earthworms and frozen foods such as bloodworm. As sand has been mentioned as the ideal substrate for these catfish I would suggest that internal power filtration or external canister filtration be used, as under gravel filtration would not be efficient as the sand would cause it to clog. Weekly or fortnightly 20-25% water changes should also be undertaken to ensure good water quality at all times. When undertaking water changes always ensure that you use a water dechlorinator, preferably one that will treat both chlorine and chloramines, prior to adding the fresh water to your aquarium.

As promised I will now mention a few species that will not grow into 'Tank Busters' and would be ideally suited to life in a community type aquarium. Please bear in mind that whilst these catfishes are not predatory they will eat any unsuspecting fish small enough to fit inside their mouths. This said I have kept some of the smaller doradids in with small fish, BUT I am not recommending that you should. I will begin with some of the more commonly seen species and mention also some that are not so readily available.

Platydoras costatus commonly known as the Humbug Catfish, the Striped Talking Catfish or Striped Raphael. This particular catfish is readily available from most good aquatic retailers, and is perhaps the most commonly seen representative of this family of catfish. Like most of the doradids it prefers to be kept in a small group, although there may be the odd squabble over territory. The natural

habitat for this catfish is the river system of South America from Peru to Brazil. *Platydoras costatus* can attain a length of 200mm or 8". I have found that when kept in small groups these catfish will soon rid an aquarium of an aquatic snail problem. Single specimens will relish snails but will be unable to rid an aquarium of snails single-handed! Price guide £4-£10 depending upon size.

Orinocodoras eigenmanni is more commonly known as the Raphael Catfish. This catfish is not commonly available but to the trained eye the odd specimen can be picked out amongst imports of *Platydoras costatus*, which has been the way in which I have gradually obtained a group of them. *Orinocodoras eigenmanni* has a more pointed snout and its scutes tend to be smaller than those of *Platydoras costatus*. There are other differences as well such as the length of the adipose fin and the shape of the caudal fin, which when viewed side by side is quite apparent. Like most of the doradids these catfish also like to be kept in small groups, which can be difficult when only the odd one or two specimens are available. Fortunately these doradids are quite happy to shoal with *Platydoras costatus*. The natural habitat for these catfish is the Orinoco River system in Venezuela hence its name *Orinocodoras*. This catfish can attain a length of 175mm or 7". Like the other doradids this catfish also relishes aquatic snails as part of its mixed and varied diet. Price guide £5-£15 depending upon size and if the retailer is aware that this fish is amongst *Platydoras costatus*.

Agonoxis pectinifrons is commonly known as the Spotted Talking Catfish.

White-spotted Doradid and Spotted Raphael. This particular catfish is also quite often available at most good aquatic retailers. The colour pattern tends to differ slightly from individual to individual, but is quite eye catching being jet-black body colour with white to creamy coloured blotches along the body and fins. Again this catfish prefers its own company so the aquarist should ideally keep them in small groups of between 4 and 6 specimens. The natural habitat for these catfish is throughout the river systems of South America notably in Peru and Pebas. This particular species can attain a length of 140mm or 5½". These catfish thrive on a mixed and varied diet including aquatic snails. Price guide £4-£10 depending upon size and availability.

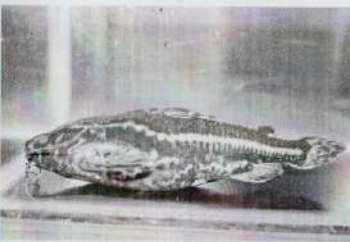
Amblydoras hancocki is commonly known as Hancock's Catfish or Talking Cat. There is also reference made to this catfish under the name of *Amblydoras affinis* just to add to the confusion. This catfish is occasionally seen at some retailers and is quite often imported at no more than 50mm or 2" in length. This species can attain a length of 100mm or 4". Again another catfish that fares better in small groups therefore I would recommend keeping between 4 and 6 specimens together. The natural habitat for these catfish is widespread throughout the rivers of South America from Guyana to Brazil. This particular species prefers water that is neutral and soft with dense vegetation for it to hide amongst. Again these catfish thrive on a mixed and varied diet that includes aquatic snails. Price guide £5-£10 depending upon availability.

Anadoras grypus is commonly known as the Dusky Doradid. This catfish is

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not very often available for sale to the hobbyist. The odd one or two sometimes appear amongst shipments of *Anblydoras hancocki*, which as juvenile fish share a similar colour pattern. Whilst collecting fish in Peru I was able to collect large numbers of what initially appeared to be *Anblydoras hancocki*, but which later turned out to be *Anadoras grypus*. The specimens collected were approximately 25mm or 1" in length. This particular species can attain a length of 150mm or 6". Another peaceful doradid that prefers to be kept in groups of at least 6 specimens. The natural habitat for these catfish is South America, widespread throughout the Amazon Basin. As with *Anblydoras hancocki* these catfish prefer neutral and soft water conditions with plenty of plant cover. They will thrive on a mixed and varied diet including aquatic snails and bloodworm. Price guide £8-£20 depending upon availability.



Acanthodoras cataphractus

Acanthodoras cataphractus is commonly known as the Painted Talking Catfish and is also sometimes referred to as the Milky Cat. This catfish is occasionally available to the hobbyist. It can attain a length of 150mm or 6". I have kept these catfish in small groups of 4 specimens when numbers have been available to purchase, otherwise I have kept them with the other species of doradid already mentioned. The natural habitat for these catfish is South America throughout the Amazon River estuary. This species fares well on a mixed and varied diet. Price guide £8-£15 depending upon availability.

Opsodoras stuebeli is commonly known as the Feather Barbels Catfish. This is another species that is not readily available to the hobbyist, but is a very peaceful addition to a community aquarium. This species can attain a length of 115mm or 4 1/2". Another doradid that prefers safety in numbers assuming that you can purchase them. I would recommend that you keep at least 4 specimens together. The natural habitat for these catfish is the rivers of Peru and Ecuador. Good water quality is required by these fascinating catfish, as is a diet that includes finely shredded shrimp and bloodworm. Price guide £8-£15 depending upon size and availability.

There are a number of other species of doradid available to the hobbyist in small numbers, which is why I have concentrated this article on those species mentioned above. I hope that this will give you an insight into this fascinating group of catfish and that some of you reading this article will take up the challenge of keeping them.

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