

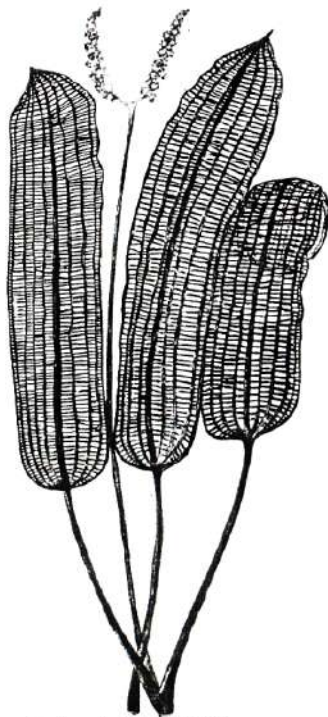
FISHKEEPERS & WATER GARDENERS

BULLETIN



£1.95 (UK)





Apogon fenestralis (POIR.) HOOKER

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FROM THE EDITOR

Welcome to the Federations new Magazine, a quarterly journal produced for the aquatic enthusiast and hobbyist alike. I would like to say how excited and honoured I am to have been asked by The Federation to be editor of the of the longest running hobbyist magazine in the U.K. for the Aquarist and Water Gardener.

For many of you that do not know me I started fish keeping when I was fourteen with a small concrete pond in our back garden. My Dad supported my enthusiasm and took over by building a new larger, deeper pond that could be deep enough to support a Water Lily and be free from ice at the bottom.

Soon after an aquarium with fish was advertised in the local paper so my Dad and I went to look at it. When I first saw it my eyes popped out of my head, I only new of coldwater fish such as Goldfish and Sticklebacks like those seen down the canal. This fish tank had lights, plants, gravel and fish of the like I had not seen before. There were red fish with swords to there tails, fish that were so black they were as black as coal and flat looking fish, blue in colour with two dark spots that seemed to walk through the water with a pair of long feelers. These of course turned out to be Swordtails, Black Mollies and Gouramis plus many others. My parents brought it and I was now an Aquarist. Shortly after I saw the first Marine fish in my local Aquatic shop, we brought a second aquarium and we purchased real sea water at 6 Pennies a gallon, but that's another story.

I joined my first club, which was called the West Middlesex Aquatic Society that held it's meetings in Ealing Town Hall.

I won my first trophy with a Convict Cichlid, what a thrill that was. A lot of water has passed through the net so to speak since then. I have been a Catfish fanatic, I like setting up "Furnished Aquaria" at shows plus growing Aquatic plants, Tropical and Temperate Water Lilly's. I have a Fish House attached to my garage that has both artificial and natural light.

Now I have told you some of my background why not write an article on how you started and the fish you keep, we all want to know.

Good fish keeping.

Malcolm Goss.

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P.S. If you want to meet Malcolm personally invite him to your club, address can be found within the speakers list.

Amazon Fish

Introduction: It was on a visit to meet Oliver Crimand at the Natural History Museum that Oliver showed me some excellent photos of fish that had been taken by the author of this article Alan Shearer. They were of specimen fish caught in the Upper Rio Negro that flows into the Amazon. Many are of catfish and I was please to be asked by Oliver to help identify many of these fish. Later I meet Alan at his home and was privileged to hear of his adventures first hand. Alan kindly wrote his storey down for me and I have for the first time ever put it into print for you to share with me.

It was a few years ago, when I was in Tuscany Italy doing some bird photography, that I met Chris Clark. Chris was a young adventurer who had travelled the world. One of the places he had visited was the Amazon basin and, from the way he described it, had obviously fallen in love with the place. He said that he was going back there to write a book and would I like to join him, I jumped at the idea. That was in the May and after a lot of planning I met Chris and a few of his friends in Manaus the following March.

Manaus is the capital city of the Amazonia and used to be the worlds supplier of rubber. It sits on the northern bank of the Rio Negro, a mighty river that eventually flows into the river Amazon east of Manaus. Chris had a friend in Manaus called

Plinio. He was a young man who lived with his wife and their two children in what I called "sick city". This collection of wooden houses built on stilts over the edge of the river. They have no sanitation or water so every thing comes out of the river and eventually goes back there. It is not a nice place, it was quite remarkable that, even in all that pollution, the water was teaming with fish who would attack anything you threw in. Plinio had secured two jungle men for us. Namely, Justino, a man of about sixty, who turned out to be an incredibly good tracker and very knowledgeable about fish, birds, mammals, insects and snakes. Joau, the other jungle man, was about thirty five. He was also very good in the jungle, but his speciality was night fishing and would keep us fed on many occasions. There were two more crew members, Canca, our engine man and last but not least, the ships captain Severinho. He would navigate us safely up some amazing, and at times, well nigh impassable rivers. It took three days to purchase our supplies for the trip. One very important item we would be using a lot were canoes. There were three of them and we tied them on the side of the river boat we had hired.

One morning Justino took me down to the fish market. It started at sun rise, which is about 6 o' clock, and is held on the river bank. There they all were with stalls selling the most incredible number of species you have ever seen in one place. All different shapes and sizes and mixed in with fruit and vegetables stalls. In the early morning light it made a spectacular site.

Well, the time finally came and we were off, leaving Manaus cruising west. It was so nice to feel a breeze after being in a hot and humid city. The sight that lay before us as we left Manaus was unbelievable.

The size of the river was incredible. The shore being a thin black line way off in the distance. Severinho said it was about fourteen miles across at this point. We cruised all day until four o' clock or thereabouts, and then pulled up a small river and tied up for the night. The minute the boat stopped they all jumped in the river to cool off, all except me that is because I can't swim! It was still extremely hot.

Justino could not speak English and I could not speak Portuguese. He pointed at the canoe then at the river and at me. I knew exactly what he meant. Within minutes we were off. The scenery was breathtaking. He took great pride and pleasure in showing me all the wild life we came across, some of which you could not see until he pointed it out. Unfortunately that night our freezer packed up so we had to eat chicken and ham for the next few days. We then threw the rest of our meat away. This meant we would have to live on fish from now on. As we travelled further west we would come across the odd house built high up on the river bank. Again on stilts to avoid a rise in the river and some protection against snakes and insects. Some had small banana plantations. These were owned by Caboclos, a river-side folk of these parts. Caboclos are of mixed blood, Indian, Negro or Hispanic and they rely on the river for their living, fish being their main source of protein.

I would often go out at night with Joau in the canoe, fishing. It was always exciting. He would paddle in what I called the "quiet mode". Not a sound! It was unbelievable how he could manoeuvre the canoe so accurately amongst the trees and low bushes at the rivers edge with one hand controlling the paddle and a torch in the other, then when he had a fish in his sights he would put the paddle down quietly, pick up the spear, and with

great accuracy thrust it in the water. It was not often that he missed. Out would come a fish on the end of his spear and with a bang on the back of the head with a machete the fight was soon over.

When the water was low, as it was in the months of April and May, they mainly caught catfish and bottom feeders. They also caught a fish they called a Tocunary. These grow quite large and comes in different colours and patterns, some have stripes and others have large dots that mimic eyes. Late one afternoon Justino beckoned me in his usual manner and we were off in the canoe. He found a piece of river that narrowed. On one bank he tied one end of a net to an overhanging branch, we then paddled across, playing out the net as we went. The net was about a metre in depth. On reaching the other side he then tied it off to another branch. We then went back over it tying pieces of wood to it at intervals to act as floats. The next morning we returned to examine the net to see what we had caught. On this occasion, there were only two, not very large fish, but every little helps. We sailed through what are known locally as the "Islands".

There are hundreds of these long, narrow, forested islands. It is the biggest group of fresh water islands in the world. Some are so large you are not sure if it is the river bank or not. We sailed on hour after hour through virgin forest, it seemed endless. Most the time there was this continuous sound of insects, there must be millions of them. We carried on sailing up numerous rivers and eventually sailed up the Jouaperi then into a small river called the Xixuau. We stopped after about one kilometre and tied up. It was a beautiful spot and we decided to stay there a few days.

Justino and I were soon off in the canoe. By now we had an understanding that did not need words. We rounded the bend of the river and surprised a group of six giant river otters (*Pteronura brasiliensis*). They looked at us, we looked at them and then, with a large splash, they were gone. I was very excited. The river was just like a mirror. The images were incredible, with the river reflecting a near perfect image of trees and trunks entering the water. At times it was difficult to see where the two met, and with the sky above they made some lovely photographs. On our way back to Manaus we stopped off at a place where the Rio Jauaperi meets the Rio Negro. I stayed with the local Caboclo, the Valdimar family, for a week while Chris and his friends went to get some more rice, beans etc. The Valdimars lived in a small boat with a thatched roof. There was Valdimar, his wife and six girls, aged from one to eleven. I don't know how they managed! And, to cap it all, right in the middle of their boat was a Singer sewing machine. I went along with Justino and we put our hammocks up in a house higher up the river bank. The view that evening was spectacular. We looked out of the flooded forest with a few dead trees protruding from the water and with the different colours of the sky reflected in the water it was breathtaking at sunset. The whole family helped to look after us. One daughter, possibly about seven or eight would come and sweep up for us, while others were preparing food. This surely was heaven. Unfortunately the week went by far too quickly and when Chris arrived back we sadly had to say our farewells and leave.

In the next Bulletin we will follow Alan and his friends in the Amazon. How Chris formed the Amazon Association and created a nature reserve.



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FOOD FOR THOUGHT

I'm sure you will have heard the saying "You are what you eat," and it's perfectly true, not just when you're struggling to lose the extra pounds due to the excesses of Christmas but also as part of an on-going regime for a healthy life. The same applies to your fish and providing a healthy and correct diet for them is an important key to success not only for their individual well being but also for the environment in which we keep them.

Over recent years prepared fish foods in all of their many forms have advanced quite spectacularly and are light years ahead of the "ants eggs" days of the past. Now they are prepared with a great deal more skill to ensure that they have an excellent balanced nutritional profile, are highly palatable and avoid producing excess waste which can pollute the aquarium environment.

When Hagen formulated their range of Nutrafin Max Foods a few years ago the criteria they followed was to produce a high quality food in nutritional terms, which would taste good to the fish and be low in terms of waste and therefore be low polluting. Most of the fish foods on the market are based upon fish meal and depending upon the quality of the meal

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and how it is processed there are wide differences in the amount of ash (mineral content) and pollutants such as phosphorus in the finished product. Ash is the non-digestible residue of bones, scales and cartilage in the fishmeal, which pass through your fish and ends up causing pollution. Ash contains significant amounts of phosphorus, which is really undesirable, because even at very low levels it can encourage rampant algae growths. Obviously by reducing the ash contents in the food it's possible to reduce pollution and the phosphorus entering the system. The Nutrafin Max range of foods was, therefore, formulated using the best raw materials available with an aim to lower ash and phosphorus content.

The best quality fishmeal is Herring Meal, which contains as much as 72% protein. However, it also contains 1.6% phosphorus which was higher than the target 0.6% to 0.9% that Hagen researches were aiming for. They then discovered a process called HFPC (Hydrolysis Fish Protein Concentrate) which produces levels of 83% protein and much lower levels of phosphorus.

HFPC is made by a Canadian company who has a patent on the product and they supply the Aquaculture Industry worldwide. To make

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NUTRAFIN

max

The First Premium Fish Food

Ash content vs the competition

Product	Ash Content (%)
NUTRAFIN Max	0.8
Competitor 1	1.4
Competitor 2	1.7
Competitor 3	1.8

Phosphorus content vs the competition

Product	Phosphorus Content (%)
NUTRAFIN Max	0.8
Competitor 1	1.0
Competitor 2	1.6

Health food for your fish

We all know how important a healthy, balanced diet is for your fitness and general well being. Well, the same applies to your fish! Nutrafin Max is a truly premium fish food, its optimum protein and balanced vitamin & mineral levels ensure your fish receive all the nutrition they need for a long, happy life. Low phosphorus means less messy algae, and low ash means less waste in your tank. This means fewer water changes and less work for you! Call us on the number below for your nearest stockist, and give your fish the nutrition they deserve.

Rolf C. Hagen (UK) Ltd. Tel: 01977 556822 www.hagen.com

which was higher than the target 0.6% to 0.9% that Hagen researches were aiming for. They then discovered a process called HFPC (Hydrolysis Fish Protein Concentrate) which produces levels of 83% protein and much lower levels of phosphorus.

HFPC is made by a Canadian company who has a patent on the product and they supply the Aquaculture Industry worldwide. To make HFPC they place whole fish into a vat full of enzymes to break down (liquefy) the protein in the fish. This means that the process is 100% natural, as no chemicals are used and ties in with Hagen's desire to make more natural products. The liquefied protein is passed through a very fine mesh, which sieves away all of the bones, scales and other mineralised remains. The enzymatic process is then stopped and the HFPC is freeze-dried.

This means that now we have a product that is basically "Pre-digested" which makes it very easily digestible but contains almost no ash or phosphorus. Formulating a food based solely upon HFPC alone would nevertheless be undesirable on two counts. It would be very expensive and be too low in phosphorus to meet optimal dietary needs of fish, which

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require minimal amounts of phosphorus for a balanced diet. Hagen researched found though that mixing HFPC with non-processed Herring Meal overcame

All fish food producers make a food designed to enhance fish coloration. Hagen decided to formulate all of their foods to include colour enhancers. The enhancer they used is called PDP (Pre-Digested Plankton) and it is made by the same company who make HFPC following a similar process. They actually use Krill, tiny shrimps that are found in the richest sources of plankton. Enzymes again are used to break down the protein so the shells are left behind. Once again it is a completely natural process and produces colour enhancers, which are especially good for intensifying pink and red coloration. Krill is also an excellent source of protein and is very palatable therefore a powerful fish attractant.

Using such high quality ingredients has meant that levels of fat content are also very low. If a food contains levels of fat higher than 10% this will make fish grow more quickly but can cause fatty liver degeneration - a serious liver problem that will shorten life span and eventually kill the fish. Nutrafin Max has low

fat at between 5.5% and 7.0% and is, therefore, much healthier.

The final process in arriving at Nutrafin Max as a finished product was to add essential amino acids and vitamins. Methionine (an essential amino acid) for example was added, to help with digestion. By improving digestion this once again helps to reduce waste. Nutrafin Max also includes high quality vitamin supplements including vitamins A, D and E. What's more these are stabilised by attaching them to another molecule. Light and air easily destroy vitamins so if a tub is opened repeatedly the vitamins will deteriorate with time. Some fish foods contain stabilised vitamin C to help overcome this problem but only Nutrafin Max stabilises all of the vitamins added.

Prepared fish foods, especially those from the Nutrafin Max range can therefore provide a complete and healthy diet for aquarium fishes. Alternative foods such as live or freeze-dried foods are excellent for providing variety but not likely to ensure a well balanced diet, whereas prepared foods such as those in the Nutrafin Max range guarantee an excellent balanced nutritional profile.

Win one of these prizes and you could soon be feeding your fish Nutrafin Max - the first PREMIUM Fish Food with stabilised Multi-Vitamins and Essential Amino Acids. Nutrafin Max is a highly digestible health food for fish containing Pre-digested Plankton, a 100% natural additive high in protein that enhances colours and is very palatable.

Nutrafin Max's low fat content makes it a healthy choice, its low moisture content makes it better value, its low phosphorus content means less algae and the low ash content means less waste to pollute your tank.

Feeding Nutrafin Max means healthier fish, less algae, fewer water changes and LESS WORK.

To win a prize, read the accompanying article "Food for Thought" and complete the following sentences:

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The advertisement displays a collection of Nutrafin water treatment products. In the foreground, there are several bottles: 'clear' (water clarifier), 'NUTRAFIN max Complete Flake Food', 'PLANT CONTROL' (algae control), 'AQUA PLUS' (water conditioner), 'cycle' (biological filtration supplement), and 'PRESHOW CLEANER'. The background shows more bottles of 'clear' and 'cycle'. The text 'Rolf C. Hagen (UK) Ltd. 01977 556622 www.hagen.com' is printed at the bottom.

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- * The tiny shrimps in PDP are called.....
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Tropical Fresh Water..... Marine..... Cold Water.....

The first five correct winners drawn from the hat following the closing date on the 30th April 2001 will each receive a selection of Nutrafin Max foods of their choice.

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GREAT NUTRAFIN MAX COMPETITION

Here's a chance for five lucky Fish World magazine readers to win a selection of Hagen Nutrafin Max foods of their choice by entering the simple competition below.

Win one of these prizes and you could soon be feeding your fish Nutrafin Max - the first **PREMIUM Fish Food** with stabilised Multi-Vitamins and Essential Amino Acids. Nutrafin Max is a highly digestible health food for fish containing Pre-digested Plankton, a 100% natural additive high in protein that enhances colours and is very palatable.

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Spring Time in the Aquarium.

We are aware that in the water garden jobs become seasonal. As we pass through spring, summer, autumn and winter there is maintenance associated with these times of the year. However our tropical freshwater aquaria that's in our home does not have climate conditions as that in our garden. Sun rays coming through a window and into your aquaria during the summer months may have an affect, but very little, but springtime is associated with cleaning, so why not really check out your community aquarium. Its always good to start with the electrics, check the plug at the wall socket, switch off first and then remove the plug. Check for cracks in the plug, but more important that the wiring is secure and that it is not just holding on in a flimsy, unsecured manner. Follow your inspection through to the lights, heater, air pump or filter, maybe both if you have them. Now with the electric switch off it is a good time to remove the fluorescent tube or tubes from the hood. Wipe the tubes very carefully to remove dirt and film that restrict the light. Tubes that maybe exposed can collect a layer of algae that forms from the spray or splash of air stones and filter returns at the waters surface. It may well be worth considering to replace the tubes if they are a year or more old, the plants will certainly benefit from the extra light. Have you got your air pump housed above the height of the water surface. I hope the answer is yes. If this were not the case then either when you switch off the pump or there is no input of electric there is a good chance you could get a return flow and the tank water would syphon off all over the floor. I hear you say I have a non-return valve fitted, but can

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you trust it. Whilst talking about air pumps it would be a good idea to replace the air stone, they do get blocked after about six months or so. Blocked air stones not only give less of that vital air to larger fish, but also cause a backpressure on the diaphragm within the pump causing premature splitting of the rubber. Also replace the pumps air intake filter, usually placed in the base of the pump often looking like a cotton wool pad. For those who have internal or external power filters it is also a good time to strip them out. Save half to a third of the filter medium, this existing filter medium contains vital bacteria that will help purify the aquariums water. The remainder either replace with the manufacturers recommended filter medium or thoroughly wash out with fresh running water. Flush through both the inlet and outlet hoses using hot running water. Never use household cleaning agents; even the smallest traces can be fatal to both fish and plants. Reassemble and restore the electric supply and checking for any water leaks through the filter hoses.

If cutting type plants have grown to and along the waters surface they will require cutting down and these can be planted in the sub-straight next to the existing plants adding more to the density of your plants. Those of you who have rotted plants cut off dying and half eaten leaves. Some rotted plants grow runners that produce young plants and these maybe left or cut and replanted near the parent plant or in some other location in your aquarium. Still carry out your weekly maintenance of cleaning the inside of the aquarium and changing approximately one fifth of the water. Finally wipe the out side glass with a leather then sit back with that well deserved cup of tea and just enjoy the pleasure of watching your fish.

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2000 WAS ANOTHER SUCCESSFUL YEAR FOR THE ROYAL HORTICULTURAL SOCIETY SHOWS, WITH RECORD ATTENDANCES BY GARDEN LOVERS FROM ALL OVER THE WORLD.

SHOW DATES

- 
MALVERN SPRING SHOW
11th-14th May 2001
 A spectacular spring music event continues to grow in its national reputation year after year.
- 
CHELSEA FLOWER SHOW
22nd-25th May 2001
 This most prestigious event continues to attract quality visitors from all over the world.
- 
HAMPTON COURT PALACE FLOWER SHOW
3rd-8th July 2001
 The world's biggest annual gardening event set in the landscaped parkland of Hampton Court.
- 
THE ROYAL HORTICULTURAL SOCIETY FLOWER SHOW AT TATTON PARK
18th-22nd July 2001
 With over 50,000 visitors each year, one of the most prestigious horticultural events in the North West.

Collectively, the four shows enable the Royal Horticultural Society to continue its aim to inspire, inform and entertain the nation's gardeners.



Tetra CORAL CREATIONS

A Tetra (USA) line that became unavailable in the UK three years ago. Recently a small stock was identified in the UK warehouse and Tetra have agreed to its **sole distribution** in the UK through the Federation of British Aquatic Societies' Merchandising at **absolutely knock-down prices!**



Here is the opportunity for all of you marine or Rift Valley enthusiasts (or any fish-keepers for that matter) to create a coral scene **without damage to the environment**, for **Coral Creations** are a synthetic resin product which is totally inert and harmless to your fish tank. Now you can enjoy the sight of lifelike 'coral' at a fraction of the cost.

As an example, the top of the range "Brain Coral 1/2 helmet" which normally would



retail at £23.25 can be yours for merely £6.80 and for a "Mini Brain Coral" in either white or natural, you pay only £2.00 instead of £6.75. Do not forget that these recommended retail prices are now three years old, so you are getting even better value!

This unique opportunity is only available to you through FBAS Merchandising. Obviously the cost of post and packing would be high on items of this kind, so we are offering **Coral Creations** for sale only at open shows and major shows and only whilst stocks last. Enquiries via the Merchandising Officer - address in your Year Book!

F.B.A.S.

Take the "A" out of F.B.A.S. and what have you got ———— "The A Team". Peter Furze (FBAS Chairman), Peter Caira and Vic Higgs, all members of Hounslow, A.S. This group of lively lads will put B.B.C. garden make over team in the shade. When its time at the U.K.'s top garden shows "The A Team" will be there. In fact as our picture shows Tommy Walsh one of the famous three, the other two being Charlie Dimock and Alan Titmarsh, asking the lads some advice. All this was before making his guest appearance at the B.B.C. Gardeners World Show, being held at N.E.C. Birmingham last year. Of course they will be the first to tell you they could not achieve all the work involved without the help of many other Federation members. Peter Furze was telling "The Bulletin" how many hours of work goes into a display, not only at the exhibitions but also in planning the design and the logistics in getting the materials on site. Peter would like to say a "Big Thank You" to our sponsors, with out there help these achievements could not be done. Finally congratulations to the team on achieving a Bronze Award at the B.B.C. Gardner's World Exhibition 2000 at N.E.C. Birmingham.

Special thanks also to the following:
 Joe Nethersell, Joyce & Bill Rundle
 Adrian Dempsey, John Pell
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 Keith Clark - KC Landscapes

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- Alan Sergeant Ass.



DIARY DATES

F.B.A.S. General assembly	3 March
F.N.A.S. Annual General Meeting	4 March
Ashby.A.S. Open show (Y.A.A.S.)01734-347995	
Greenock DAS. Open show (F.S.A.S.) 01475-704219	
CAST 88. Auction 01978-761829	11 March
Catfish Study Group. Spring Auction, Wigan.	
Lincoln. Open show(Y.A.A.S.)01522-703620	
Caer Urfa A.S. Auction 0191-523-7464	18 March
Dunstable DAS. Auction 01525-715822	
Northampton A.S. (F.B.A.S.) 01604-411591	1 April
AAGB. Convention 2001,Sheffield	20-22 April
Southend A.S. Open show(F.B.A.S.)	5 May
Aberdare A.S. Open show	6 May
Ryedale A.S. Open show	
& Auction 01751-472715	13 May
F.B.A.S. General Assemble	3 June
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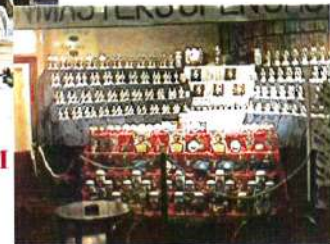
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IMAGES
FROM THE
SUPREME
FESTIVAL
WEEKEND 2000



BRACKLESHAM
BAY



Cladophora aegagropila - meaning lake ball.

Comes from lake Myvatn in North Iceland.
Lake balls. These green algae grow on the lake bottom and form a carpet which is very useful for small bottom-living animals. Some of the algae grow into fist-size balls. A large part of the lake bottom is covered by the algae.

Other vegetation.

Other vegetation in lake Myvatn includes:

1: Potamogeton filiformis 2: Myriophyllum spicatum 3: M. alterniflorum

4: P. perfoliatus 5: Ranunculus trichophyllus

Lake Myvatn

Lake Myvatn is a 37 km² lake in time volcanic zone in Iceland. The volcanic zone is a continuation of the Mid-Atlantic Ridge where continental drift takes place. The whole area is shaped by volcanism which typically occurs on long fissures and can be explosive at times. The lake and its outflowing river, the Laxi., is well known for its rich bird life, especially ducks, who find there a suitable habitat for nesting and feeding in the fertile water.

Fish in the lake.

Fish that live in the lake include Arctic Charr (main commercial stock), The three spine stickleback (most abundant fish in the lake) and the Brown Trout.

The area is protected under special law and has a status as a wetland of international importance. The aquatic vegetation is monitored. The purpose is to follow changes in the distribution of aquatic vegetation in Myvatn, especially the Cladophora mat on the bottom of the South basin. Aerial photographs are taken annually or every other year. Monitoring started in 1992 but older data exist.

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Iceland is not the only place!

Cladophora balls can also be found in the Hokkaido district of Japan, there is a lake with especially fine Cladophora balls which form part of a summer festival connected with the folklore of the local Ainic people. Judging by the issue of a special stamp and a picture postcard depicting Cladophora balls meaning, "Cladophora worship" this seems to have become a tourist attraction. Moreover, there is (or was) a bar in Tokyo called Marimba, the Japanese name for these balls, where plastic Cladophora balls are on sale.

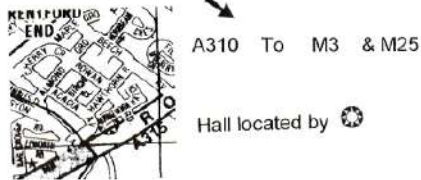
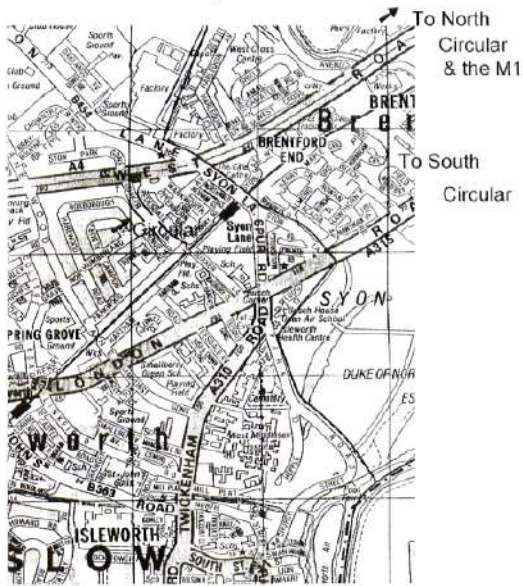
Editors comments: "If exhibitors at open shows don't wish their balls to be felt by Judges, please state clearly on there entry form (J & S please note)."

It seems that the mythology surrounding these balls involves a young man and girl who drowned in the lake, their hearts turning into Cladophora balls. So popular have Cladophora balls become in Japan that they are now protected plant. It is said that plants of other non-ball forming species are rolled by hand into balls and sold as true Marimba.

*Excerpt from Freshwater Algae:
Their microscopic world explored, by
Hilda Canter- Lund and John W.G.Lund.*

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Location Advice of the next
Assembly Meeting
Rose Community Centre



**YOU
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YOUR
COMPANY
COULD
BE
ADVERTISING
IN
THIS
SPACE
FOR
LESS
THAN
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Acorus gramineus (AITON) SOLANDER

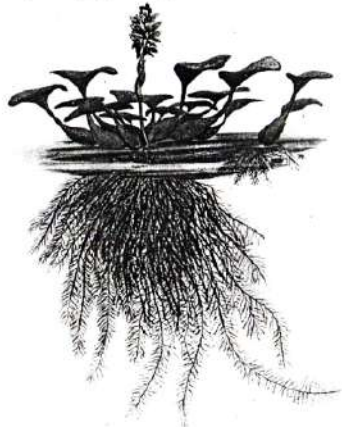
The reason for this is that living symbiotically inside the fronds of Azolla is a cyanobacterium, *Anabaena azollae* which is a fixing organism. Azolla has been used as a green manure in China for over 2000 years. So I use the plant as a sort of filter in early spring when the first sunny days start the *Filament algae* into growth and then it provides nutrients for my Fuchsias etc. all for free. The Water Cress

is much the same really, when you next buy a bunch don't throw the stems away, just drop them into the pond where they float forming a dense mat of roots, obviously useful in the water, more attractive than a bale of straw and you will never need to buy Water Cress again.



**SHOWING PLANTS
BY
MALCOLM GOSS**

Not many aquarist that show plants think of a floating plant to produce a first place award. Producing a fine specimen of Water Hyacinth, *Eichornia crassipes*, with a spread of 350mm or more it will take some beating. An aquarium of 450mm x 450mm is really required for this plant, plus a depth of water minimum 300mm to show off that vast root system. The roots are invaluable as a natural refuge for small fry and two of these plants with good overhead lighting in a two foot aquarium make an ideal location for aquarist fry spawning all forms of Characins or Barbs.



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This plant is naturalised in most tropical parts of the world by introduction, in fact with its extremely fast rate of growth most countries see it as a nuisance, blocking up irrigation channels and killing off the natural habitats fauna.

The Water Hyacinth is readily available in most Water Garden centres through out the summer months. It will be best grown in an aquarium that is placed in good sun light with warm and humid conditions. It is most spectacular when in bloom with unusual form of blue flower, unfortunately the flower is only at its best for one day.

Description: Eichornia crassipes. (Martius) The foliage grows in rosettes. Bright shiny green leaves with petioles swollen into light pithy buoyant ovals supporting the plant at the water surface, an added feature is the root system. Mature roots being long and fine of dark purple in colour. Flower blue to purple.

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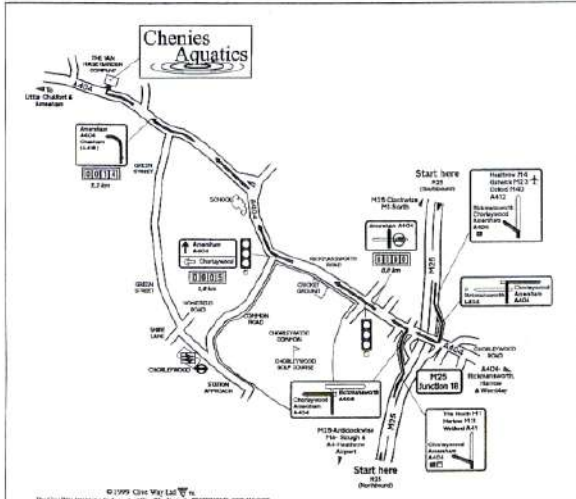
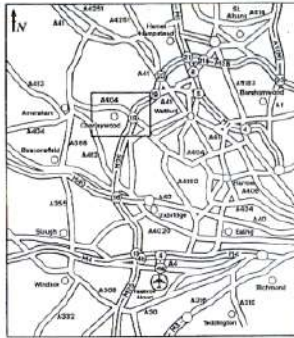
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Head on to the M1, at junction 4b (M25 junction 13) head northbound on the M25 following signs to Watford. At junction 18 turn off onto the A404 and follow sign 9630V.



SPAWNING the AUSTRALIAN RAINBOW

Rainbow fish are considered very much the "in" fish over the last few years and with their fantastic colours, plus being a medium size fish, quite justly so, making them ideal for the community aquarium. The Australian rainbow *Melanotaenia maccullochi*, has been left on the shelf, or should I say in the dealers tank these days. Many years ago I was fascinated by the reflected colours. In the aquarium I kept them in, I had a light coming through the base of their aquarium with the substrate swept away to enhance their colours.

It was first introduced into the United States in 1934 and arrived here just after the war. It is a peaceful, hardy fish fed on a diet of flake food. Both sexes have deep red horizontal stripes over flanks of combined colours being silver, brown and yellowish green. The fins are reddish pink edged with yellow. The doubled dorsal fins are noticeably more pointed in males once they have reached maturity at a size over 50mm. Where as the females are rounded. Conditioning your Rainbows



is a simple diet of frozen or live brine shrimp. The spawning aquarium should be of "24x12x15" in size with the water hardness of 7.2/7.0 pH and a temperature of 78°F. Plenty of plant such as *Myriophyllum* or *Cabomba* placed in thick clumps planted through out the aquarium make an ideal spawning location. An inducement to spawn can be to add two or more air stones with the bubbles running through the plants. These fish like to swim through the fine bubbles when spawning, however prior to spawning the males will have a bright yellow to white stripe running from the top of the mouth to the first ray of the dorsal fin on the dorsal surface. This is also in keeping with other Rainbow species. At this stage the females should look noticeably fat with eggs, indicating they are in spawning condition. When spawning starts, this can take place over several days, each day some 20/30 eggs may be laid within the plants suspended by long filaments. After spawning has clearly finished, up to around seven days the eggs take about 10 days to hatch giving you plenty of time to remove the adults. The fry are very active and remain near the surface, swimming in vertical manoeuvres. Feed infusoria, then newly hatched brine shrimp, after a week or two they will except powdered flake foods or manufactured fry food from your aquatic retailer.

The young do not like strong light, so the top lighting should be kept low or introduce a floating plant, such as duckweed or similar. When the light is too bright the fry tend to hide and eventually die from starvation. A good spawning can produce up to 200 youngsters that are fast growing and in 4 to 6 months should reach 50mm.

Known your Fish

Megalodoras paucisquamatus.

Doradidae from Brazil, South America.

Body

The body rather slender, caudal peduncle compressed, back of head is "roof shaped" with steep sides. Eye is small and well protected. Maxillary barbells reach beyond one third of the humeral process, mental barbells slightly longer than the snout, and postmental barbells not reaching the base of the pectorals.

Colour

Overall brownish, region above the lateral scutes is dark brown, and lighter below and on the belly. Fins are colourless, lobes of caudal fin pale yellow with dark middle rays.

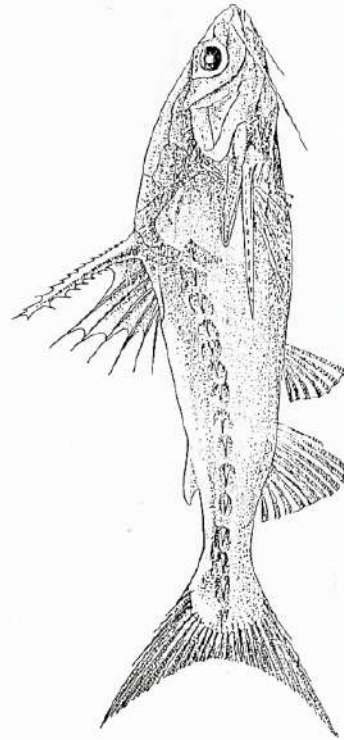
Size

300mm. Plus

Remarks

Megalodoras paucisquamatus was first pointed out to me by Gordon Howes at the British Natural History Museum in 1992. Many catfish enthusiast either keep or know of *Megalodoras irwini* the described species shows many characteristics *M. irwini*, but there are deviations. Dorsal spine is as long as pectoral spine. The number of serrae in the dorsal spine vary – anteriorly 14 (*M. irwini* 32/35), posteriorly 9 (*M. irwini* 22/25), and fewer lateral plates (*M. irwini* has many), that are noticeably smaller more so near the base of the caudal.

Text: M. Goss.



MEGALODORAS PAUCISQUAMATUS

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Pass the salt

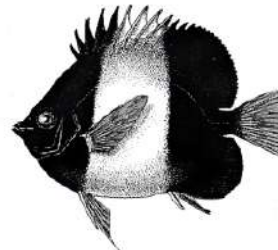


Hemiodus permutus(Cuvier)

Activated Carbon

Granular activated carbon may be used to adsorb dissolved organics using a liquid-solid boundary. The carbon must be in the form of fine, dull granules of pin-head size that can be contained between layers of filter pad. Large, shiny pieces of carbon are not useful and may retain toxic materials that do harm. The granular form can be washed free of such matter easily, adsorbs up to a half of even more of its own weight of pollutants and may thus be used in small quantities. A few ounces per 100 gallons (400 litre's) can be sufficient, to be changed every three months. Samples of activated carbon differ considerably in their capacity to take up dissolved organics and it is difficult to assess these differences. This is not surprising since it may

be made from wood, bone, coal and other various materials, about the only thing to do is to depend on a reliable source of aquatic retail supplier that has tested material that it is selling. Alternately, a gas grade activated carbon purchased from a chemical supply company will usually be satisfactory but very expensive. Ideally, the container for the carbon should be a long cylinder, to give a prolonged exposure. Not too rapid a flow is desirable. However, just a layer between the contents of an ordinary wet filter is most usual and a result of continued recalculation of water, a good extraction occurs. It seems to be a common misapprehension that used carbon can be reactivated by heating or by steam, but this is not the case unless 900°c is reached as in its original preparation. As with protein skimmers, carbon does not remove ammonia, nitrites or nitrates. They must be used in conjunction with biological filtration.



Hemitaenichthys zoster(Bennett)

49

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Know your Plants

Aponogeton elongatus (Muell)

Habitat: North and East Australia.

Description: Leaves are very similar to the species *A. crispus*.

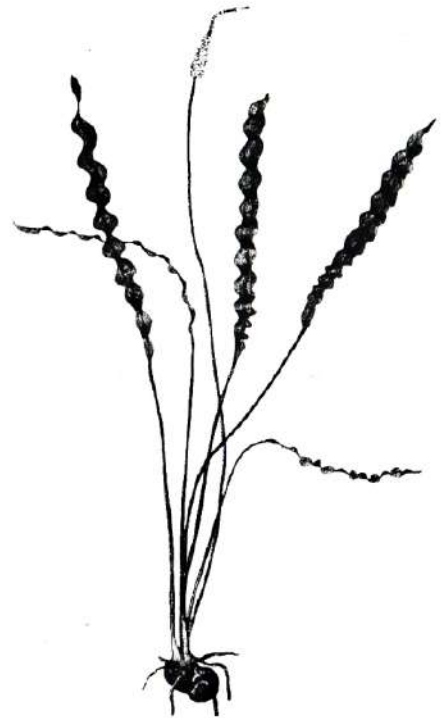
Petiole is about 10cm long, leaf blade is 3-4cm wide and 20-30cm long and crispate. There are 2-4 length-wise secondary nervures beside the central leaf rib. Leaf base is narrow at the petiole, in contrast to *A. crispus*. Inflorescence consists of a narrow spike with yellowish flowers.

Ecological data: Does well with *Vallisneria spiralis*, *Otelia alismoides*, *Blyxa*, *Ceratophyllum*, *Myriophyllum*.

Cultivation: Like other species of *Aponogeton*, the vegetative period is during the whole year except from November to February when it hibernates in cold water. This hardy plant is popular among aquarists and is quite undemanding in its water conditions in contrast to some of the more sensitive species. Water from 3 to 7 DH, pH value from 6.5 to 7.8. *A. elongatus* prefers light that is of a medium intensity, sunshine only occasionally and never for a long time. Hybrids with flowers, mostly purplish, often show up. It crosses readily with *A. ulvaceus*.

Dr. Jiri Stodola.

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Aponogeton elongatus F. MUELL.

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PREPARED BY ROGER FOGGITT PHOTOGRAPHY AT THE TETRA INFORMATION CENTRE
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NEXT ISSUE FEATURES

AMAZON FISH PART TWO

POLLUTION IN THE
AQUARIUM
BY **TETRA**

UP THE CREEK
WITH A 6'X2'X2' FURNISHED
AQUARIA !

BARILUS
BY
Paul V. LOISELLE
GHANA

FISH-KEEPING
A HOBBY OR OBSESSION
PART 3
BY
LARRY BROWN

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After a lifetime advising you to do a water change every few weeks, we're now saying you only need to do it every six months.

It takes some bottle.



After you have used Tetra's new water change kit with your aquarium, you'll be amazed at how easy it is to use. The kit includes a water change bucket, a siphon, and a water change kit. The bucket is made of high-quality plastic and is designed to hold up to 5 gallons of water. The siphon is made of flexible plastic and is designed to siphon water from the aquarium into the bucket. The water change kit includes a water change bucket, a siphon, and a water change kit.

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EasyBalance

