BULLETIN

WINTER 2018

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NEWS, VIEWS AND ARTICLES BY FISHKEEPERS FOR FISHKEEPERS

FEDERATION OF BRITISH AQUATIC SOCIETIES
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QUARTERLY BULLETIN

WINTER 2018

CONTENTS

Edited, published and produced for the FBAS website by Les Pearce

EDITORIAL

Welcome to the Winter 2018 edition of the Bulletin. There are some outstanding items inside - something of interest for everybody.

There is a fascinating article on Habitat and Aquaria and an in-depth look at how they do it in Malta as we are invited in to the fish room of Mr Victor Grech, a long-serving and valued member of Malta Aquarists' Society.

There is also an interesting article on Bumblebee Gobies plus all the news and results from the final Festival of Fishkeeping at Hounslow Urban Farm.

Please, please keep the articles and information coming in. Anything that you think may be of interest to fellow fishkeepers is always welcome. You can contact me or send articles using the details below.

Finally, I would like to take this opportunity to wish everybody all the best for Christmas and the New Year.

LES PEARCE (FBAS Bulletin Editor).

Email: Les_the_Fish@sky.com

Post to: 44 Weeks Road, RYDE, Isle of Wight, PO33 2TL

We regret to announce the passing of Alan Henderson of Corby & D.A.S.

Alan served with distinction as the FBAS Trophy Officer for many years. We extend our sincere condolences to Margaret and his family.

Bee Keeping

Breeding the Bumblebee Goby
Brachygobius nunus

by **TOM & PAT BRIDGES**

First published in "The Scat" - St. Catherine's Aquarium Society, Canada.
Aquarticles

Bumblebee Gobies belong to the genus *Brachygobius*. Since *brachy* is Greek, for short, that comes to 'short goby' - so far an accurate description for these approximately 1½ inch (40 mm) fish. The goby part has something to do with their having two dorsal fins, (or one interrupted one) and more to do with their ventral fins being fused to form a kind of natural suction cup which allows them to stick themselves to almost any surface at almost any angle.

After much eye strain both by me and my friend Paul McFarlane, trying to accurately count the rays in their anal fins, our best guess as to species is '*nunus*', (supposed to have 1 spine and 7 rays). I understand that a *nunus* is a friendly little hole-dwelling creature in mythology and, once again, this fits our fish very well.

Male Bumblebee Goby

Female Bumblebee Goby

The 'Bumblebee' part of their common name obviously has to do with their big heads, (compared to their bodies), the four brown/black vertical stripes on a yellow/gold background and their habit of usually 'buzzing' from one surface to another as a means of moving about their tank.

The several species of Bumblebee Gobies come from Asia, where they are found in salt water swamps and stream estuaries in India, Thailand, Indonesia, Borneo and Malaysia. Although most of them can tolerate completely fresh water, they are more comfortable in a brackish environment and we are in the habit of adding at least two teaspoons of artificial sea salt mix per gallon to their tank.

They may eat a bit of dried flake food but it doesn't get them excited. Live and frozen foods are their favourites. Whiteworms are quickly gobbled up. Daphnia and brine shrimp don't last very long either. When those aren't available, frozen blood worms and shrimp seem fairly acceptable.

We bought our first dozen of these neat little creatures some years ago. The literature suggested that they were probably the easiest of the gobies to breed and we found them attractive. At first we put them in a large tank, (100 gallons), where they hopped about happily but did nothing breeding-wise. Some accounts of successful spawnings suggested a small tank, so we moved them to a 5 gallon setup with some snail shells and bricks for caves.

Over the next couple of years nothing happened except that from time to time one died. We began to wonder if, by some fluke, we didn't have both sexes. We pretty much gave up on them and there was just one left in the tank. It was four or five years old and healthy. About that time we found a tank full of tiny bumblebees in a pet store at a reasonable price and decided to start again. A dozen were purchased and placed in a ten gallon tank with an undergravel filter and a cluster of barnacle shells for caves. This group was fed on live and frozen stuff and, finally, after they had grown some, the one 'left over' was moved in with them. Some of them grew chubbier than the rest but still no spawning.

Group Cleaning Up Whiteworms

We decided to make a concentrated effort. Larger and more frequent water changes were made, (twice a week), and more salt was added bringing it up to about a tablespoon per gallon. As much as possible they were spoiled with live food.

Late in September 2000 I noticed one morning that something strange was happening. For a few minutes I thought some other species of fish had jumped into that tank. Two or three of them were swimming about rapidly like regular fish, (not hopping), and they were an almost uniform pale yellow/gold colour. Only by looking closely could I see traces of the dark vertical stripes. I wondered if our change in treatment had made them sick.

Male in Breeding 'Dress'.

They were acting a bit demented. I settled down to watch and, since they were darting in and out of the caves in their barnacle, I thought, maybe not demented, maybe, finally, spawning activity.

They were indeed the males. The females were obvious. They hadn't changed colour at all. If anything their stripes seemed even darker and they were very rotund. The antics of the males appeared to be working because some of the females were definitely hanging around the cave entrances. Once in awhile one would pop inside for a moment.

Two Plump Females

Apparently, at least one female agreed to stay a bit longer and lay some eggs because, a few days later, a patch of eggs could be seen suspended like little sacks from the top and sides of one of the caves, and the male, (now back to normal colour), was in there on guard. He came out and looked menacing when any other fish came too close. Perhaps the eggs had been there longer than I realized because, 4 days later many little transparent slivers with, except for their eyes, just one spot visible in the middle of their bodies, were swimming around in the tank.

Fry (Enlarged)

We quickly prepared a 5 gallon tank with a box and a sponge filter and partially filled it with water syphoned from the parent's tank -- along with as many of the hatchlings as I could suck into the syphon hose. A small fine-meshed net was used to catch a bunch more and the rest were left to their fate. The rearing tank was gradually topped up with fresh water at about the same salinity to avoid any shock to the

babies. A rough count showed that I had captured at least 80 fry and that was plenty. Those that remained in the parents' tank lasted for 2 or 3 days and then gradually disappeared.


Babies With Stripes

We fed the fry paramecium, vinegar eels and, sparingly, liquid fry food for a few days and then began adding a little newly hatched brine shrimp nauplii. When the inevitable pink bellies appeared we continued with vinegar eels and shrimp nauplii only. The tank was kept very clean with partial water changes being done every day. Growth was fairly rapid.

In a couple of weeks they began showing dark stripes and fairly soon they proved that their ventrals were fused because they began sticking to surfaces more and swimming freely less. I had never thought of duckweed as lethal but we lost several babies because they appeared to get stuck to the duckweed roots and were somehow unable to let go. I guess they starved to death. I removed all remaining bits of duckweed.


Looking More Like Their Parents


They Keep On Growing

By November the babies were small, perfect replicas of their parents and we even took a bag to Brampton's auction. I guess the idea of brackish water must have scared all those cichlid types because the auctioneer had to work hard to get any bid at all.

Does this mean that Bumblebee Gobies are worthless? We don't think so. It means that, around here anyway, you won't get rich by breeding them but the satisfaction of spawning and rearing a tankful of these little charmers is a fine reward in itself.

KNOW YOUR FISH

Brought to you by:

Penguin Tetra
Thayeria boehlkei

Common Name: Penguin Tetra

Scientific Name: *Thayeria boehlkei*

Origin: Upper Amazon basin in South America. They are now largely bred in captivity

Maximum size: 5cm

Suitability for Aquarium: A great fish to keep in aquaria with other small or peaceful species. They should be kept in groups of at least 6 to ensure you see their natural behaviours.

Aquascaping: The aquarium should have open spaces together with areas where the fish can hide. Dense planting or bog wood roots are ideal. Some water movement is ideal .

Water requirements: Temperature 24 – 26oC, pH 6.0 – 7.0, though they will live in water up to a pH of 8, GH 2 – 10odH, KH 1 – 5odH

Diet: FishScience Tropical Flakes or Micro Granules as a standard food. Penguin tetras also enjoy occasional feeds with small live or frozen foods

Sexual differences: Difficult to distinguish males and females. When mature the female is slightly larger and has a more rounded abdomen.

Breeding: Penguin Tetras will usually breed in a shoal, with the eggs being scattered in the aquarium. Condition the adults with live foods prior to breeding to ensure success. Keeping them in soft and slightly acidic water will also help. Spawning triggers include a large partial water change and a slight change in temperature. The parents will eat the eggs, so provide fine leaved plants and/or spawning mops to trap them. Remove the parents after spawning. The fry should be fed on newly hatched brine shrimp initially, followed by powdered fry foods.

Photos provided by Rocky Crowder - Crowders Aquatics

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FishScience

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&
SHRIMPS IN A SPIN!

Visit www.tmc.co.uk

Visitors to last year's Aquatic Trade Show at Telford were exposed to many new products but none of which were as intriguing as some of the, dare I say it, 'revolutionary' designs in marine aquarium filtration equipment.

Everyone knows that marine fishkeeping demands a far greater application and well-disciplined effort on the part of the fishkeeper, so it should come as no surprise that there is always a continuous interest in making things more automatic (and labour-saving) if at all possible.

The main concept is centred around a continuous supply of filter medium – paper or fleece are current favourites – which is regularly renewed as demanded by it actual use, alleviating the need for frequent manual renewal by the fishkeeper.

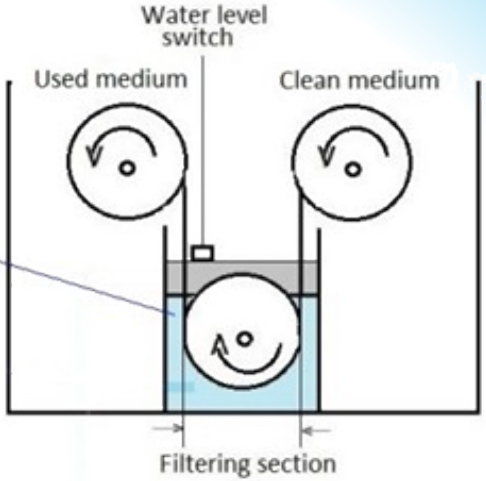
The above range of filters (by TMC) attracted great interest and this 'Rreef Roller' system is both simple and clever in its operation.

REEF ROLLER

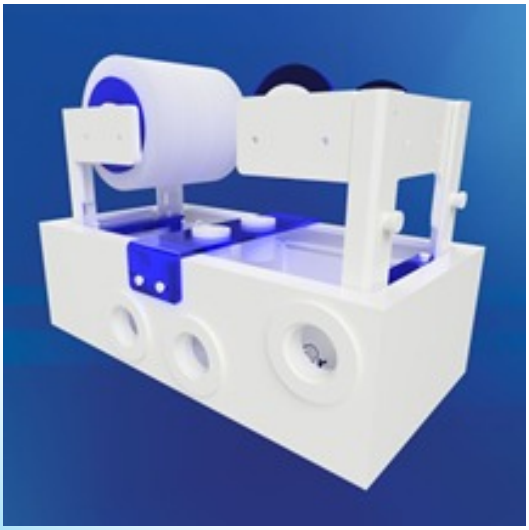
PRINCIPLE OF OPERATION
(Filter medium can be paper or fleece)

Aquarium water passing into and out of compartment is filtered by a layer of medium wrapped around drum.

When filter medium becomes clogged, water level rises (grey area) and micro-switch operates motor to pull new clean section of paper into position thus restoring water flow through the unit.



The accompanying diagram outlines the basic principles and it is also fair to point out that there are several variations on this theme.



Visit www.klirfilter.com

acknowledgements to Theiling

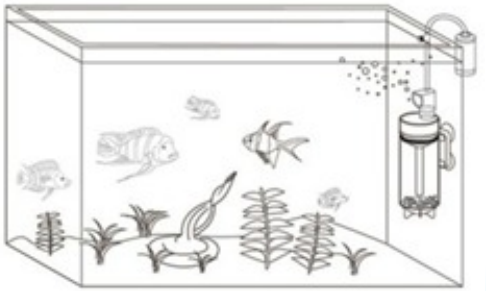
It's uncanny how things (or ideas) come back to haunt you.

It seems only like yesterday (OK then, many years ago!) that I tried hatching brine shrimp within my community tank.

I simply hung am external filter box filled with saltwater inside the tank, added shrimp eggs, aeration and watched the live foods hatch. The ultimate USP (unique selling point) of this idea was that I couldn't find a way to get the newly-hatched shrimp to jump over into the main tank!

Recently, at the Festival of Fishkeeping, I came across this much-improved upgrade.

The Ziss Fish Egg Incubator is just the thing and, as its name implies it can be used for things other than brine shrimp.



This compact, internal container uses aeration to whirl around the eggs until hatching occurs and a simple layer of sponge prevents them from spilling out into the main aquarium. All very neat and tidy but I bet someone's still working on the final solution!

Visit: www.zissaqua.com

VICTOR'S FISH ROOM

BY JONATHAN THEUMA CARABEZ
(Malta Aquarist Society)

EDITOR'S NOTE: - In 2017, I had the honour and pleasure to visit Malta and to judge at Malta Aquarist Society's annual Open Fish Show. During the course of this, I was pleased to meet several of Malta's club members, including a gentleman called Victor Grech (pictured below). I was told by several of the Malta members that I really should see Victor's fish house. Regrettably, my time in Malta was limited but having seen this article and photos, kindly written and supplied by Jonathan, I can see why they said it! Try not to get too jealous!

Victor started his hobby way back in 1972. As like the majority of other fishkeepers, his first fish were common livebearers such as Guppies and Mollies. Victor was one of the first few members who joined the Malta Aquarist

Society. He frequently competes in the annual fish show and won the aggregate cup 18 times. This makes him the most successful winner from all members. Apart from that he has won several Best Fish awards. In 2017 Victor fittingly won the FBAS Judges award.

Following his passion for this hobby, Victor built an enormous fish room where he proudly displays the trophies won along the years. This is situated in his basement.

African cichlids are his favourites as they stand out in colour and behaviour. He has various cichlids from Lakes Malawi, Victoria and Tanganyika. As one can see from the fish in his fish room, he's built large tanks for large fish. With his commitment and dedication he has over 4000 fish of various species and sizes. Being obsessed about his fish, they are kept in excellent condition. *P. nattereri*, Oscars and several Tanganyikan cichlids are some of the fish which Victor has managed to breed.

The aquariums in his fish room are built from bricks and tiles with a glass panel on the front. This is not the norm for building aquariums but is just another alternative for bigger species. His biggest aquarium is 6 metres x 1.8 metres x

80cm high. Arowanas, Pacus, Tilapias, Central American cichlids and large catfish are kept in this aquarium. On the sides he's got several aquariums measuring 1.8 metres x 2 metres x 80cm high. These house most of the cichlids like *Aulonacaras*, *Pseudotropheus*, *Julidochromis* and many more species. Surplus fry, barbs and loaches are kept in 1.2 metre aquariums at floor level.

All aquariums are filtered with a trickle filter, using low wattage pumps. The fish room is space heated with a gas heater when temperature drops.

Victor's fish room is a dream for many of us. Visiting once will send you dreaming and thinking of a bigger fish room yourself.

HABITAT & AQUARIA

BY F F SCHMIDT

Summary of a talk given to the 23rd Hendon Convention On 17 April 1982

Asia, Africa, America, fatherlands of our exotic aquarium fishes and plants. From all parts of the world aeroplanes bring boxes with plants and fishes to importers and pet shops to meet our desire for exotic pets.

Sooner or later they are sold to an aquarist and they are destined to live the rest of their lives in captivity. Although the situation in their natural habitats is mostly far from ideal, dry season, lack of food, predators and so on greatly endanger the lives of the fishes. I think we have the obligation to treat the fishes and plants as well as we can and as close to the optimum as is possible within the limits of captivity.

In Holland about 90% of all fish and plants are kept in a so-called 'furnished aquarium'.

We could describe a furnished aquarium as a tank in which we combine plants and fishes from all parts of the world to an aesthetic total. It will be clear that the accent in this type of aquarium is on aesthetics. That means, is it nice to look at? Does the aquarium exterior harmonise with the furniture and decoration of the room and is the composition of the aquarium interior up to a certain standard?

From this point of view, it is very seductive to select plants and fishes merely

for their shapes and colours but since we are dealing with live creatures this can only be one of the selection criteria. Another and more important thing to consider is, can we create an environment in which plants and fishes can live comfortably?

Fortunately, in nature, in most habitats environmental circumstances vary greatly during the year. Temperatures and water quality can differ greatly between dry and rainy season for instance.

To cope with these differences our plants and fishes must have a possibility of adjustment, that makes it easier for us to create an acceptable 'home' for them.

Before turning to practice, something must be said about water. Chemically pure water, H_2O if you like, does not exist in nature. It can only be found in a laboratory. In nature water is always mixed with other components. Mineral salts are dissolved in it and when water contains only a small quantity of dissolved minerals we call it soft, when it contains many, it is called hard. For the purposes of aquaria, the hardness is measured in degrees of German hardness. One degree German hardness is equal to 10 milligrammes of lime or 7.14 milligrammes of magnesia dissolved per litre of water.

The total amount of hardness depends greatly on the soil with which the water is in contact. In Amazonia the water flows through diluvial soils that do not emit many salts and so the water over there is very soft. In the Mexican Chihuahua Desert the soil is almost pure calcium that dissolves very easily in water and the water in the oases over there is extremely hard.

But fishes live in all known water conditions, even in seawater.

Another aspect of water is its acidity, which is measured in pH. The neutral point is 7. If pH is under 7, the water reacts acidic; if pH is over 7 the water is alkaline.

Since fishes are cold blooded animals, their activities depend greatly on the surrounding temperature. If the water is too cold for them, their activities will be on a very low level and their colours will only be faint. If the temperature is too high, activity will also be high, which may negatively affect the duration of

their lives.

As I said before, fortunately most fishes can cope with differences in water quality and temperature as far as differences may happen in their natural habitats. By the way, this does not concern breeding. When we want our fishes to breed, we must rather exactly create the environment of the spawning habitat. This point of view concerns only the keeping of plants and fishes in an aquarium.

For that purpose, we can distinguish three different water qualities:

Under 8 dGH and acidic.
Between 8 and 12 dGH and neutral.
Over 12 dGH and alkaline.

It is a matter of course that the behaviour of the fishes is also a reason for selection. Piranhas or snakeheads cannot be kept in company of other smaller fishes, they will eat them. Sand diggers like many Cichlids will ruin the architecture of the aquarium completely. The same is valid for plant eaters like the Scat or a *Metynnis* species.

Selection of suitable plants is even more simple than fishes. Plants are generally not critical as far as temperature is concerned. There may, however, be a problem with regard to hardness and acidity of the water. Since plants need mineral salts, especially calcium, to build their bodies, they cannot grow in too soft water. Under 3 dGH plant growth is impossible. Most plants also do not like very hard water and in water over 20 dGH, growth of most plants will come to a standstill.

A thing we must consider in the selection of plants is the usefulness of the plant.

Let us first look at the situation in nature! Many plants we use in the aquarium which are continuously submersed, that is 'under water', grow emersed in nature, that is 'out of the water'. These plants grow on benches or other rather moist places and sometimes, in the rainy season when the water level is extremely high, it happens that they become temporarily submerged in the water.

It has turned out that many of these so-called 'moor plants' can be kept permanently under water without harm to the plant. Only in most cases the looks of the plant when emersed are completely different to when it is submersed. Sometimes so different that you do not recognise it.

Of course, we also use plants in the aquarium that are real aquatic plants, that means plants that in nature too are always submersed.

Most real aquatic plants have, in their leaves, special organs called *hydropotes*, this means 'water drinkers', which enable the plant to take in its food directly from the surrounding water. The roots serve mostly only as a means to settle in the substrate and have very little or nothing to do with the feeding of the plant.

As you will understand, emerse growing moor plants cannot take food from the surrounding air and therefore, moor plants have no *hydropotes* and are unable to take in food through their leaves in a submerged situation. They have to depend fully on their roots as the feeding organ.

That leads us to the conclusion that genuine aquatic plants in the aquarium are far more useful than the moor plants. The aquatic plant acts as a natural filter and helps us to keep the aquarium water pure. So it is rather important that a fair proportion of the aquarium plants are real aquatic plants.

In this respect in aquatic circles, the expression 'biological balance' is often used. I dare say that in an aquarium, a biological balance is absolutely impossible. Apart from the fact that in comparison to nature every aquarium is overpopulated, a number of other factors make a balance impossible.

A biological balance exists if the organic debris, like faeces of the fishes, dead fishes, dead plants or parts of plants are completely reduced by bacteria into inorganic salts like nitrates, phosphates and sulphates which, in their turn, are completely consumed by plants and botanic plankton, such as algae, which serve as food for the animals in the habitat. More abstractly said, producents, reducents and consuments should balance.

One of the aids in nature to maintain a perfect balance is water flow. In nearly every habitat is a continuous inflow of clean water from wells, rain, etc. and a continuous outflow of more or less polluted water in the direction of the sea.

In the aquarium the situation is completely different. To keep our overpopulation alive, we have to feed our fishes and that means that an extra dose of organic waste is entered into the aquarium water on a daily basis. Even if the bacteria in the aquarium and filter system succeed in reducing the overdose, it is absolutely impossible for the aquarium plants to consume all inorganic salts. Even more so since we do not allow any development of algae in the aquarium.

A good help in keeping the water as pure as possible under the circumstances is a regular change of a part (25 - 30%) of the aquarium water with dechlorinated tap water. In doing so, we replace the aquarium water, polluted by plant nutrients with relatively poor tap water. Another help can be an adequate chemical filter system. Adequate means that pump capacity and quantity of the filter mass must be adapted to the aquarium involved.

Chemical filter system means that the filter material used should have the ability to adsorb nutrients. In aquarium filters, it is mostly activated charcoal is used for this purpose.

The best and most natural filtration, however, is the aquatic plant with its ability to take nutrients directly from the water. It will be clear that the faster a plant grows, the more nutrients it will absorb. So, it is rather important to stimulate plant growth and that can only be done with light. Do not forget that the fluorescent tubes over the aquarium replace the tropical
sunshine in the original habitat of the plant. It is a fact that even in the shadow in the tropics the amount of light is higher than we ever can imitate. So, the more lighting you use, the better it is for the plant.

Often the story is heard, that algae in the aquarium is caused by light. This is only partly true. Algae is certainly not caused by light, but by water pollution. Every hydrobiologist can tell what is wrong with the water if he looks at the algae by means of a microscope. It is true, however, that the development of the algae is stimulated when the duration of lightning is too long. In the

tropics, the day lasts from six in the morning until six in the evening. That is the light rhythm that tropical aquatic plants are adjusted to. That is the time during which it assimilates and grows. In our region the situation is different. In summer we have very long daylight times, from about 4 o'clock in the morning until 9 o'clock in the evening. In winter, daylight is only about 6 hours. Non-tropical plants have the ability to adjust to the summer daytime and continuously assimilate and grow, no matter how long the day lasts.

The algae in a tropical aquarium is over 90% non-tropical so, if we have the lights on from early morning until bedtime like many aquarists do, an algae problem will arise. Since the tropical plants cannot take in nutrients after about 7.00 pm, the algae takes its chance and starts growing during the evening.

What we should do is to give the aquarium as much light as possible to stimulate the growth of the tropical plants from about 7 am until 7 pm, that is the so-called 'grow-light'.

In the evening from 7 o'clock the lights should be switched off except for one tube, the front one, which allows you to observe plants and fishes, but which is insufficient for any plant growth, including algae. This is the so-called 'looking light'.

The colour of the light is not so very important. We know that the blue and the red part of the spectrum are important for plant growth. Any fluorescent tube that produces enough red and blue will do. The 'warm-white deluxe' tube, for instance, is a good choice. Never use the 'Gro-lux' type tubes. These tubes produce only red and blue and the visual effect on the plants and fishes is very unnatural.

Now let us turn to the aesthetic aspects of the furnished aquarium. Of course, it is impossible to give a complete recipe. Everyone has their own taste but some general rules can be given. If you can see the wallpaper on the wall at the back of the aquarium, you accentuate that the aquarium is a very small and unseen unit. Cover the sides and the back with something dark. Black or dark brown polyurethane foam is a good material. It is poison-free and offers a medium for some plants, like Java Fern or Java Moss to grow on. A very simple solution is to paint the outside of the aquarium in black. Of course, there are

many more possibilities; cork, stones and so on.

The bottom should not be too flat. Some differences in level on the bottom will improve the architecture of the aquarium. The so-called terraces can be made out of wood, stone, etc.

The character of the Dutch furnished aquarium is determined by the rather abundant use of plants. From the aesthetic point of view, we can give some general rules.

Tiny plants should be used in the front; big plants in the back of the aquarium. There should be variation in colour and form. Plants should be used in groups. An exception to this is a so-called 'solitary plant', that is a big, attention drawing plant like a Lotus or an Amazon Sword Plant that can be used alone. In that case, it should fulfil a real function in the aquarium architecture. In other words, it should be used on a spot you want to draw attention to.

Red coloured plants in fact should be used in the same way. They are quite popular nowadays. They are expensive and as practice has turned out, rather difficult to keep. In nature, red plants can only be found in sunny places and the red colour is an extra pigmentation as protection against the enormous overdose of sunlight.

No matter how much light we use over the aquarium, compared to the tropical sunlight it will always be insufficient for red plants and the result is that most red coloured plants tend to turn green again after a relatively short period. Moreover, in the tropics, as in our own regions, nature is green and a different coloured plant is rare. That is also the way to use them. An attention drawing group on the best lighted spot.

There is also an aesthetical side in the choice of the fish population. Here, too, contrasts are important and that is why we select fishes contrasting in shape and colour. Fishes that live in shoals in their natural habitat should also be kept in groups in the aquarium. In nature, every water layer has its own population. That means that there are fishes at the surface of the water, other fishes can only be found in the middle regions and on the substrate, you will find the so-called bottom dwellers. This situation should be imitated in the aquarium.

About 25% of the population should be surface fishes, about 25% should consist of bottom dwellers and the rest, that is 50% are fishes that normally swim in the middle part of the water.

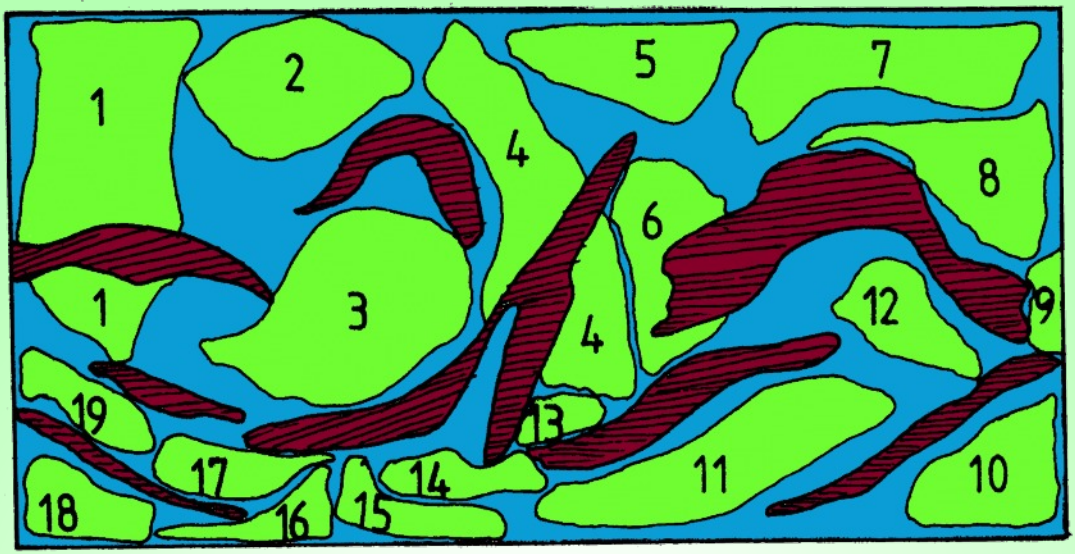
As I said before, fishes should contrast in shape and colour. For instance, *Barbus nigrofasciatus* and *Barbus tetrazona* are both soft water fishes from Southeast Asia. From a biological point of view, they can be combined very well but since shape, colour and behaviour of the two species are similar the aesthetical combination is not very good. One of the two species should be replaced with, for instance, *Hyphessobrycon erythrozonus* or *Hyphessobrycon ornatus*. Another example is a combination of *Rasbora caudimaculata* and *Micralestes interruptus*. Biologically speaking, not bad, but since both species are silvery and elongate it is better to replace one of the species with, for example, *Glossolepis incises*.

A last question is, how many fishes can be kept in the aquarium? There is a very specific answer. In a well planted aquarium, one gramme of fish can be kept in three litres of water, but since it is rather difficult to weigh your fishes and because no lists of weights exists in Great Britain as far as I know, I think it is better to use the rule of thumb that an average aquarium fish needs 10-15 litres of water.

In all my talks the remark comes from the audience that the Dutch planted aquarium is unnatural. Of course, it is, but I think that every aquarium, planted or not, is unnatural. The planted aquarium at least is nice to look at and can be an ornament in your living room.

In the second part of this article, we will see that an aquarium can be decorated in a completely different way. In the so-called 'specialist aquarium'. Here, it is attempted to imitate the natural habitat as well as it can possibly be done.

Before we end this first part, let us have one more look at planted aquaria.



Aquarium size: 200cm long x 90cm deep x 70cm high

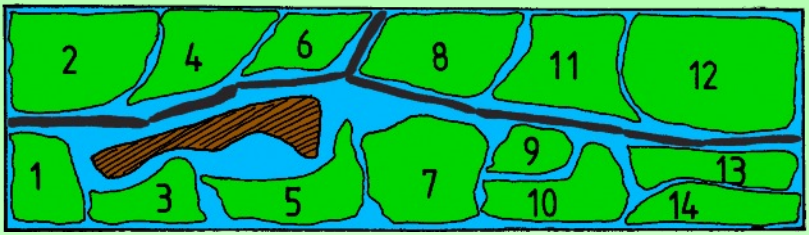
Lighting: 575 watt Fl.

PLANTS:

1. *Limnophilia aquatica*
2. *Rotala rotundifolia*
3. *Alternanthera rosaefolia*
4. *Hygrophilia difformis*
5. *Vesicularia dubyana*
6. *Ammania gracilia*
7. *Ludwigia repens*
8. *Hygrophilia stricta*
9. *Najas minor*
10. *Cryptocoryne beckettii*
11. *Saururus cernuus*
12. *Nymphea lotus (red)*
13. *Glyceria maxima*
14. *Micranthemum micranthemoides*
15. *Cryptocoryne petchii*
16. *Heteranthera zosterifolia*
17. *Lobelia cardinalis*
18. *Cryptocoryne wilissii*
19. *Valliseria spiralis* var. torta

FISHES:

15 x *Aplocheilus lineatus*
8 x *Micralestes interruptus*
13 x *Hyphessobrycon erythrostigma*
8 x *Barbus lineatus*
7 x *Barbus pentazona*
7 x *Barbus sp.* 'Odessa'
5 x *Otocinclus affinis*
11 x *Botia sidthimunki*



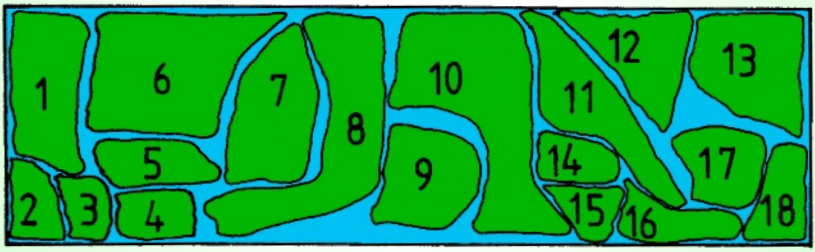
Aquarium size: 195cm long x 55cm deep x 60cm high
Decoration: Slate and Wood Lighting: 390 watt Fl.

PLANTS:

1. *Rotala rotundifolia*
2. *Alternanthera lilacina*
3. *Hydrocotyle vulgaris*
4. *Hygrophilia difformis*
5. *Cryptocoryne wendtii*
6. *Ludwigia repens*
7. *Heteranthera zosterifolia*
8. *Hygrophilia corymbosa*
9. *Nymphea lotus* (red)
10. *Cryptocoryne willissii*
11. *Alternanthera rosaefolia*
12. *Vallisneria spiralis*
13. *Cryptocoryne petchii*
14. *Cryptocoryne walkeri*

FISHES:

18 x *Cheirodon axelrodi*
12 x *Hyphessobrycon ornatus*
10 x *Nannostomus beckfordi*
8 x *Hasemania marginata*
9 x *Micralestes interruptus*
8 x *Corydoras julii*
8 x *Poecilia variatus*
8 x *Thoracocharax securis*



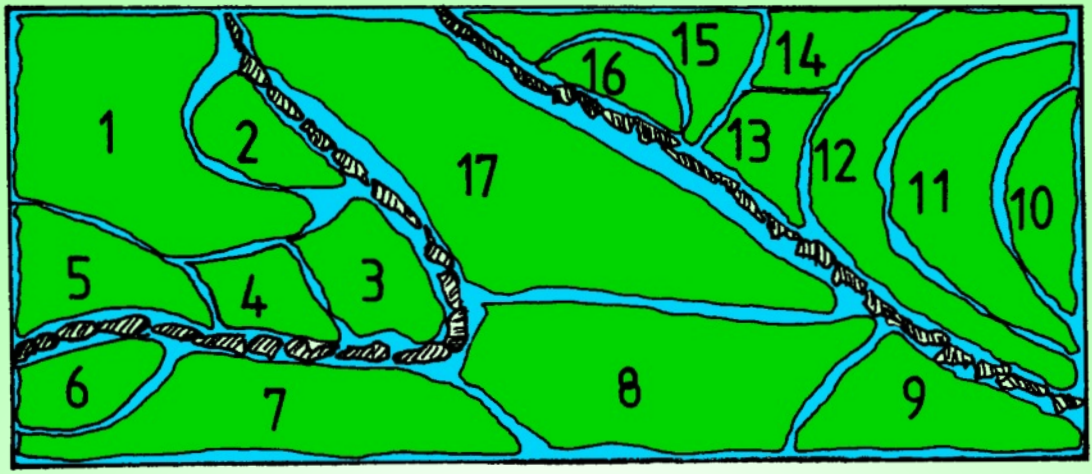
Aquarium size: 170cm long x 50cm deep x 45cm high
Lighting: 250 watt Fl.

PLANTS:

1. *Alternanthera lilacina*
2. *Vallisneria spiralis*
3. *Anubias nana*
4. *Cryptocoryne wendtii*
5. *Nymphea lotus* (green)
6. *Ludwigia repens*
7. *Heteranthera zosterifolia*
8. *Alternanthera rosaefolia*
9. *Cryptocoryne wendtii*
10. *Lobelia cardinalis*
11. *Nomaphila siamensis*
12. *Ludwigia glandulosa*
13. *Hygrophilia difformis*
14. *Ammania gracilis*
15. *Cryptocoryne petchii*
16. *Hottonia inflata*
17. *Alternanthera lilacina*
18. *Potamogeton geayii*

FISHES:

9 x *Rasbora heteromorpha*
6 x *Acanthopthalmus kuhli*
6 x *Petitiella georgiae*
5 x *Megalamphodus sweglesi*
10 x *Nematobrycon palmeri*
8 x *Cheirodon axelrodi*
2 x *Loricaria parva*
5 x *Poecilia maculata*
2 x *Otocinclus affinis*
5 x *Trichogaster leeri*



Aquarium size: 130cm long x 55cm deep x 45cm high

Decoration: Lava Stones **Lighting: 240 watt Fl.**

PLANTS:

1. *Hygrophilia stricta*
2. *Nymphea lotus* (red)
3. *Rotala wallichii*
4. *Ludwigia repens*
5. *Valliseria spiralis*
6. *Micranthemum micranthemoides*
7. *Sagittaria subulata f. pusilla*
8. *Saururus cernuus*
9. *Cryptocoryne balansac*
10. *Cabomba carolinae*
11. *Alternanthera rosaefolia*
12. *Lobelia cardinalis*
13. *Myreophyllum maltogrossense*
14. *Ludwigia repens*
15. *Bacopa amplexicaulis*
16. *Cryptocoryne blassii*
17. *Mayaca vandellii*

FISHES:

10 x *Cheirodon axelrodi*
6 x *Carnegiella strigata*
6 x *Corydoras paleatus*
5 x *Barbus oligolepis*
6 x *Nematobrycon palmeri*
10 x *Pyrrhulina filamentosa*
8 x *Hyphessobrycon ornatus*

2018 BRITISH OPEN CHAMPIONSHIP

British Open Champion - *Amphilophus citrinellus*
Allan Finnigan, Leicester A.S.

Second Place -
Distichodus teugelsi

Steve & Debbie Edwards

Third Place - *Aulonacara maylandi* Sulphur Head Eccles Reef

Allan Finnigan, Leicester A.S.

Fourth Place -
Neolamprologus leleupi

Allan Finnigan, Leicester A.S.

Fifth Place - *Scobiancistrus aureatus*
Allan Finnigan, Leicester A.S.

Sixth Place - *Ambastia sidthimunki*
Allan Finnigan, Leicester A.S.

2018 SUPREME CHAMPIONSHIP

SUPREME CHAMPION - *Aulonacara jacobfreibergi 'Eureka'* 96pts
Allan Finnigan, Leicester A.S.

Second - *Tropheus duboisi* 95pts
Allan Finnigan, Leicester A.S.

Third - *Leporacanthicus galaxias 'White Spot'* 94pts
Allan Finnigan, Leicester A.S.

Fourth - *A.citrinellus* 93pts
Allan Finnigan, Leicester A.S.

Fifth - *A.maylandi*
Sulphur Head Eccles Reef 92pts
Allan Finnigan, Leicester A.S.

Sixth - *S.aureatus* 91 pts
Allan Finnigan, Leicester A.S.

2018 FESTIVAL OF FISHKEEPING
SUPREME PAIRS

Supreme Pair - *Erethistes pusillus*
S & S Brown

Second - *Corydoras concolor*
S & S Brown

Third- *Pseudomugil luminatus*
Tim Edwards

Fourth- *Pristella maxillaris*
Roy Chapman S.L.A.D.A.S.

Fifth - Trichopodus trichopterus 'Gold'
Allan Best, Strood A.S.

Sixth - *Poecilia gracilis*
Roy Chapman S.L.A.D.A.S.

2018 FESTIVAL OF FISHKEEPING
SUPREME BREEDERS

Supreme Breeders - *Ambastia sidthimunki*
Allan Finnigan, Leicester A.S.

Second - *Pseudomugil luminatus*
Tim Edwards

Third - *Limia vittata*
Tim Edwards

Fourth - *Yunnanilus cruciatus*
Allan Finnigan, Leicester A.S.

Fifth - *Xiphophorus multilineatus*
Terry Hewitt, Bracknell A.S.

Sixth - *Pethia gelius*
Tim Edwards

2018 DIAMOND CLASS FINAL

First Place - *Heterandria anzuetoi*
Allan Finnigan, Leicester A.S.

Second - *Distichodus teugelsi*
Allan Finnigan, Leicester A.S.

Third Place - *Erethistes pusillus*
Allan Finnigan, Leicester A.S.

Fourth - *Tropheus duboisi*
Allan Finnigan, Leicester A.S.

Fifth - *Barbus oligolepis*
Roy Chapman, S.L.A.D.A.S.

Sixth Place- *Alestes longipinnis*
Allan Finnigan, Leicester A.S.

FBAS NATIONAL SHOW LEAGUE

2018 NATIONAL SHOW LEAGUE CHAMPION
Roy Chapman, S.L.A.D.A.S. 603pts

Second - Terry Hewitt
Bracknell A.S.

Third - Allan Finnigan
Leicester A.S.

Fourth - Glenn Joyce
Eastleigh, S'oton A.S

Fifth - Gary Snell
S.L.A.D.A.S.

(Accepted by
Roy Chapman)

Sixth - S & S Brown

2018
FESTIVAL OF FISHKEEPING

FESTIVAL AQUARISTS SOCIETY

FESTIVAL OPEN SHOW

sponsored by FLUVAL

MAIN RESULTS

Best in Show (I)	*Betta splendens*	Maria Ornberg
Reserve (G)	*Lophiosilurus alexandri*	Allan Finnigan
Reserve (R)	*Xiphophorus milleri*	Roy Chapman
Championship Class F	*Fp gardneri*	Allan Finnigan
Championship Class J	*Trigonostigma espei*	S & D Edwards
Championship Class Q	*Xiphophorus pygmaeus*	Terry Hewitt
Diamond Class (H)	*Coydoras concolor*	S & S Brown

NOTE: QUALIFY FOR 2019 DIAMOND FINAL

Aquascapes
Marion Allum, H.D.A.S.

Bob Esson Memorial Award (U)
Ron Allum, H.D.A.S.

SOME FANTASTIC FIGHTERS

HERE'S A REAL BIG FINISH

'Hang on, Allan, there's more ... you've won the lot!'

A magical moment for all, as Allan Finnigan scooped all top Six Places in the Supreme Championship Final

2018 SUPREME CHAMPION
Allan Finnigan, Leicester A.S.

2018 BRITISH OPEN CHAMPION
Allan Finnigan

2018 DIAMOND CHAMPION
Allan Finnigan

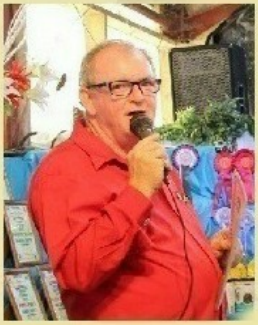
ORGANISER'S TROPHY
Allan Finnigan

HOUNSLOW'S TROPICAL POND

"I'm sure it'll be alright, once we've finished it"

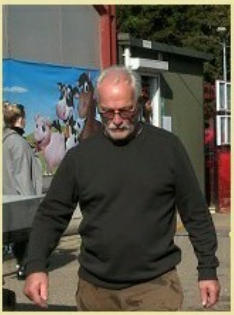
might have been the universal thought at this stage, but little did we know how good it turned out to be.

A GREAT FINAL ATMOSPHERE



"It's 'Hello' and 'Goodbye' from me as we celebrate the final Festival of Fishkeeping here at the Hounslow Urban Farm.

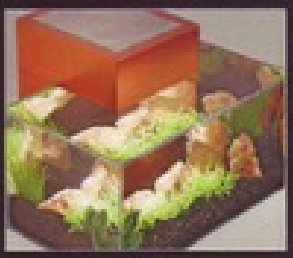
We hope you have enjoyed your times with us, and Tony's staff, over the years we've made the Farm our own fish world."



FLUVAL® EDGE

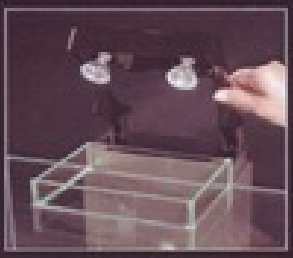
ADD DESIGN TO YOUR LIFESTYLE

Fluval EDGE brings an exciting new look to aquatics, combining the most modern aquarium design with the beauty of nature. The result is an utterly stylish complement to any home or office space.



360° Viewing
Glass top for spectacular views from all angles and less evaporation for reduced maintenance

Clear Healthy Water
Easy to use cascading flow filter with 3 stage filtration for a healthy, oxygenated environment



Clean Lines
The filter and retractable lighting modules are hidden from view for a clean, modern look

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www.hagen.com

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