



FEDERATION OF BRITISH AQUATIC SOCIETIES

BULLETIN

Spring 2014

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NEWS, VIEWS & ARTICLES

By FISHKEEPERS

for FISHKEEPERS



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BULLETIN

Spring 2014

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*Opinions expressed in any article remain those of the author
and are not necessarily endorsed by this publication*



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EDITORIAL

We all know that, to fish, water is the most important requirement for obvious reasons but how devastating it must be to the thousands of people who are experiencing a much too close up experience of living with it (and its dreadful consequences) as I write these words.

From our perspective, how many thousands of pet fish must have escaped from their own ponds and where will they end up?

For those of us fortunate enough to live 'above the high-water mark' wherever that be in your area, our thoughts are with you.

With two months of the year gone already plans for Open Shows and larger events ought to be well in hand and we have news of developments on these subjects.

We try to cover all aspects of fishkeeping, whilst keeping each within its proportionate space requirements, but we make no excuses for our main item in this issue if you feel it rather dominates this issue – its subject matter is not to be ignored.

From the all too important seriousness of some articles we also cater for the more light-hearted and we hope that you – or even your Society – will find the different viewpoint of certain popular Catfish family entertaining.

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Can the Indonesian Marine Aquarium Trade ever become sustainable?

By Gayatri Reksodihardjo-Lilley and Ron Lilley;
Yayasan Alam Indonesia Lestari -The Indonesian Nature Foundation (LINI)

It has been more than a decade since our organisation started working on marine ornamentals issues in Indonesia. From conversations with people in the Marine Aquarium Trade (MAT), and from our own experience, it soon became clear that there were a number of problems with the business that ultimately threatened the sustainability of the trade. These included poor collection, holding and shipping methods, high stock mortalities, and unfair trade practices that hurt the livelihoods of the fish collectors on who the trade ultimately depends, not to mention the survivability of the marine organisms, and the reefs on which they are found.

One overriding question emerged during these early days. How could an industry that had been operating for nearly 30 years in Indonesia still be so poorly organized and managed?



At first, we worked with an international organisation (the Marine Aquarium Council, or MAC), which, being primarily a certification organization, sought first to define a set of standards by which the MAT practices could be measured. The idea was that those people, who adopted the standards would eventually become certified so that anyone with this certification

would be recognized as promoting 'best practices' that encouraged and supported sustainability of the MAT with the motto "from Reef to Retail". So far, so good...

However, it soon became apparent that, for many in the Marine Ornamentals (MO) business, MAC was a thorn in their side, because it

threatened to disrupt the status quo that had allowed those poor practices to continue for years, and simply promoted the business ethic “buy cheap, sell expensive”, without regard for either the needs of the suppliers or the continued health of the stock at source.

Moving forward five or six years, MAC ended up being despised by many of the very individuals and businesses that were supposed to be benefiting from this cause in the long term. Seen from a business perspective, some of their arguments made sense.

MAC clearly failed in connecting markets with producers – an important component of any certification program. Nevertheless, although MAC’s work has been stopped for over 5 years, some people in the MAT are continuing to use the MAC Certified Logo, although their certification had lapsed, or they are using the ‘MAC Certified’ logo on livestock, while no certified collection and thus product exists anymore. Whenever handy as justification MAC is referred to as the sustainability force of the MAT. Still, it is a sad fact that in this part of the world at least, the trade in wildlife – including marine organisms - is largely unregulated, and efforts to do so have often failed or had limited success.

Indonesia is one of the biggest exporters of MOs. While some advocacy groups would prefer to see this trade banned altogether, our organization considers this approach to be unrealistic and impractical.¹ It is more reasonable to try to make the MAT more sustainable for the future by supporting the efforts to improve at the supply end. Those of us who were working with the supply end of the trade (primarily with collectors, middlemen and exporters) developed and field-tested a battery of training materials that were aimed at having a positive impact on the practices at the supply end.



breaking of the corals) and safe diving practices to reduce the incidences of

The work included engaging with poor fisher communities, and then training them in simple economics, collection, holding and packing methods to reduce stock mortality and to increase survivability and health of the stock, alternative non-destructive collection techniques (for example stopping the use of cyanide and

collectors suffering from paralysis and death because of the dangerous diving methods (such as compressors or 'hookahs') used by them. The methods used by the middlemen and exporters for holding and shipping were reviewed, so that some of them eventually went through the rather rigorous (for them) process of adopting the MAC standards and practices. Good working relationships were developed with the traders, who were initially very suspicious and mistrustful of our motives, but progress was slow. After all, trying to impose first world values and standards on Third world communities and businesses can take many years, or even generations.

Over time, many improvements were being made at the supply end, but it soon became apparent that greater support would be needed from the buyers in the developed countries if the trade were to be truly transformed for the better.

For various reasons, it was difficult to get the message through to many of the importers, retailers and, most importantly, the end buyers (including the hobbyists), who live so far away from the source of the products they demanded.

When asked if they knew about the problems at the supply end a leading retailer in the UK was visibly surprised, and said he had no idea about any of this. He assumed that cyanide use, for example, had stopped long ago. Clearly, the message had failed to get through to the people who have the power to lobby for and support positive change in the industry. For example, the hope was that informed end-buyers would demand to know where the stock they bought came from. But being so far away from these buyers, we had no influence on them.

Over ten years later, many of these issues are still the same, and very little has changed. In Indonesia, our organization still continues its work with poor coastal communities, but with more of a focus on community-based initiatives that promote the conservation of marine resources on which they depend for their livelihoods. Being among the poorest sectors of Indonesian society, it is important that these fisher communities have long-term sustainable livelihoods that give them the opportunity to drag themselves out of the poverty traps they have endured for so long. They need to be helped to protect their own resources.

Presently, we notice certain marine species (for example, the Blue Tang *Paracanthurus hepatus*) becoming rare.

As a consequence, collectors are obliged to travel very far from their villages to find the remaining stocks. They have to dive much deeper, increasing the risks to their health. Then the fish are held in poor conditions, sometimes for weeks, without feeding, before the collectors can return home and sell them. Stock mortality rates are therefore very high. But of course, the traders will not want to buy stressed, damaged or otherwise unhealthy fish, so after 'cherry picking' the best ones, the rejected fish will be dumped into the sea, often hundreds or thousands of kilometres from where they were caught. This has implications for mixing of genetic strains, disease introduction, and predatory species whose introduction might threaten the survival of other species.

The use of cyanide still persists, although it is possible to use non-destructive methods to catch the same species. For the poor coastal communities, the pressure is on to take as many of the dwindling resources as they can, before someone else does! But, the thinking of poor fisher folks focuses more on survival and having something to eat today, not about conservation of resources for tomorrow.

With limited and often hand-crafted equipment, cyanide use certainly increases the number of fish one can collect in the limited time while free diving. Investments in equipment are usually not covered by the low prices of the catch. So demanding cyanide-free collection is one thing, paying for it the other necessity.

Meanwhile, the exporters and importers still complain about how expensive it is for them to run their operations, and say that, in contrast, the collectors have no overheads (and possibly not even any electricity!) and therefore do not need a higher income. Some traders have even admitted that these poor coastal dwellers are easily exploited, partly because they have no education, and no money.

As one trader opined "Collectors only need to eat rice and fish heads, and don't pay taxes. What do they need money for?" The fishermen are perceived as being incompetent, because they are unable to always fulfil the orders, and greedy when they are starting to ask for higher prices for the fish they catch.



Many of them have never had the means with which to benefit from even basic education. They have little business sense, feel they have no bargaining power, and think they are obliged to accept whatever deals are put to them. They are therefore very easy to exploit and take advantage of. Unfortunately, holding facilities are so poor or absent at the supply end that the fish cannot just be pulled out of an aquarium and packed to order, like so many other consumable products. Sometimes bad weather prevents the collectors going out for days or weeks, in which time they earn nothing. It is unfair to blame the suppliers when there are so many factors affecting the supply of 'product' that are beyond their control.

In most cases the supply chain in Indonesia is long and complex with several middlemen involved. This is caused by the lack of infrastructure and availability of ornamentals in sufficient number within easy reach of export centres. This takes its toll on quality of the products, but also on the price being paid to the collector.

Prices paid for fish at source remain low – for example, collectors are paid USD 0.07 for Geen Chromis (*Chromis viridis*); this rises to USD 0.35 when the exporters sell to the importers, and USD 5 at the retailers. As another example, one small-sized Banggai Cardinalfish (*Pterapogon kaudernii*) is bought for USD 0.05 from the fishers, it sells for USD 0.45 by the middlemen to the exporters, the

Importers pay the exporters USD 2.25 per fish, which is finally sold by the retailers to the hobbyists for USD 26 for this one fish. Notwithstanding holding and transport charges (water is heavy to ship around the world!), this dramatic difference between the price at source and the one paid by the end buyers would seem to imply a degree of unfairness in this trade.

Paradoxically, while working with certified fishermen, we found that trained aquarium collectors got better paid for collecting Sea Cucumbers for the seafood trade than for the supposed luxury good of an aquarium fish!

Because of poor collection and handling methods, stock mortalities remain unacceptably high, which in turn obliges the collectors to work longer hours to collect huge numbers of fish to offset the high mortalities. Having no access to commercially-available soft netting, many collectors are still obliged to weave their own nets from coarse string, which inevitably damages the fish. The high degree of wastage has undoubtedly caused the numbers of certain populations of fish on the reefs to decline significantly.

Efforts are being made at the supply end to improve quality and reduce stock mortalities, by promoting better practices in collecting, and improving post-harvest techniques. However, the resulting improvements in stock quality have so far not triggered a willingness among the buying countries to pay more. More recently, some enlightened exporters have said they are willing to pay more to their suppliers, but their buyers (the importers), particularly in the US, will generally only buy from them if fish are cheap, especially if the stocks come from Indonesia. So what might be some solutions to these problems? Here are some suggestions:

1. Increases in the prices of fish sold need to start at the retailers' end.

A survey of hobbyists' opinions on willingness to pay more showed that overall, they are willing to pay higher prices if it can be demonstrated that the fish come from well-managed areas, and have been collected in a responsible manner. However, there also need to be assurance mechanisms that the price increase is handed down to the collectors and doesn't disappear in the pockets of the exporters only.

2. Fishers in some areas are being helped to rebuild and restore damaged reefs to enhance local fish stocks, and reduce the need for them to travel huge distances to collect the fish. Fish and other marine organisms (e.g. ornamental shrimps) are becoming available from these restored habitats, but they are not yet fetching higher prices, as most buyers will still be looking for fishers who sell their fish cheap. Greater marketing of these products to the end buyers may help to address this problem.

3. A growing number of fishers are trying to shorten the supply chains by choosing their buyers more strategically and selectively. The idea here is to reduce stock mortality, and therefore sell more fish with less rejects, but significant financial rewards that provide incentive for the collectors to improve their practices, have yet to materialise. Prices still remain much the same as before, but maybe an increased awareness of this problem among the end buyers will help to address the issue.

4. Regulations on keeping fish in optimal health have been strengthened significantly in Indonesia, and the quarantine office is now conducting onsite checks and requires exporters' facilities to comply with biosecurity regulations. This will improve standards at the supply end.



5. The hope for the development of new cyanide testing methods and portable kits is high. However regulation should be supported by market nations requesting legal and regulated fisheries by testing for cyanide upon import. A non-invasive test has been developed and is now in phase of being refined into a serial testing/portable device. See these links:

<http://www.bloolooop.com/news/sea-life-centres-in-bid-to-combat-cyanide-fishing/3665#.UqbMYygnSXI>

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0035355>

6. Some enlightened exporters and importers do see the need for positive change, and believe that investment that ultimately leads to the sale of good quality fish is economically viable and makes good business sense in terms of securing future supply. Once more, it is hoped that marketing of their products along with information that encourages the end buyers to make more informed choices, will eventually lead to a significant shift in buyer preferences towards more ethically and sustainably sourced fish.

7. The emphasis on the kinds of help given to those at the supply end has changed over time towards direct help, in the form of helping the education of the fishers children, providing better holding facilities at the middlemen and training to the fishers and middlemen how to improve their practices in keeping the fish.

It must be acknowledged that not all of the fisher communities are ready and/or able to make the necessary changes, and it takes time, money and trust building for those wishing to help them to understand this. For example, some communities are being asked to move from a barter system (no money involved, only exchanges of goods) to a monetary economy, and experience shows that this process can take many years. It is difficult to know how this will be achieved, especially without adequate support from the industry.

8. According to some importers, while captive breeding (CB) of MOs might reduce reliance on the capture of wild stock, a number of obstacles remain.

Many species of MOs are very difficult and expensive to breed in captivity, and as long as it is cheaper to buy wild-caught stock, the need to promote CB might not be felt to be so urgent. While often seen as alternative to wild trade, it is no solution for the traditional producers as most captive breeding

farms operate within market countries. One option for the future, is to promote mariculture at source, by, for example, training the fishers to catch tiny fish fry (post-larvae) and then rear them to a saleable size in cages just offshore. Although this will require investment in basic equipment and training, the prospect of rearing post-larvae in this way is attractive, not least because rearing in the sea, but in a controlled environment, will reduce the mortality normally experienced by fish fry compared to when they grow naturally and wild on the reef. If a certain proportion of the fish are then released back onto the reef, they will actually help to increase wild stocks for the future. On the downside, mariculture requires not only some basic equipment and facilities, but also a level of commitment (timekeeping, regular maintenance schedules) that the collectors still need to be taught. Many of them have no watches for timekeeping – so far, they have not needed them on a day to day basis!

9. Ultimately it is the end buyers who, through heightened awareness, have the power to pressure the industry to make the changes necessary to support a fair and healthy sustainable MO trade. The days of sellers relying on the ignorance of their customers should be long gone. Getting the message out to hobbyists so they understand the circumstances in which the fish they buy are caught and traded, so making more informed purchase choices, is a priority. We look forward to more support from agencies and individuals in those far away countries in achieving this goal.

So in conclusion, insofar as it is still profitable, the MO industry – and particularly those traders and end buyers in the buying countries - can still do much more to help the people who supply them. If they are ever to escape the poverty traps and debt spirals in which they find themselves, the collectors need a decent, fair income as an incentive to protect their resources and so have quality fish to sell.



They also need skills training of various sorts to enable them to compete more effectively in a growing world market. In developed countries, the fish collectors do receive decent wages, are given contracts, equipment, boats, training and insurance. Why not here?

In this new era of Corporate Social Responsibility (CSR), where individual companies enhance their social profiles by using some of their profits to help the needy around the world, we can hope that the MO industry might follow suit.

Let it be underlined that there are some very good people out there, whose awareness of the issues is acute, and whose willingness to engage with, and support those who supply them, will surely stand them in good stead in the future. We must remain optimistic for the future, but in another ten years' time, history will show us all how things have turned out.



Past members wishing to become new members



Whilst visiting my old friends Bernie Mould and his son, along with David Allison, to look at Bernie's new plant house I told them of the Federation's new plan to introduce individual membership. Bernie thought the idea was excellent, giving a chance for members of disbanded Clubs a chance to be part of the aquatic hobby again.

As I chatted over old times it was nice to see Bernie's son take so much interest in what we had to talk about. Richard has his Dad's keenness in the hobby, much to his Bernie's delight.



Bernie has set up an aquarium in his plant house but still has three on-going set ups in his garage.



From his conversation I feel it will not be long before one or two more tanks from the garage will be transferred to the plant house.

David Allison is just as keen a photographer today as he has always been; Richard's very keen too and produced a very up market SLR Digital camera.

The Federation will be pleased to welcome Bernie, his son Richard and David and any more of you that have lost your Societies and want to keep in touch.



Corydoras “origami”

Taken from the website of Fair City A.S

<http://www.faircityaquaristsociety.co.uk>

comes news of yet another slant on the popularity of *Corydoras*.

Now, without all that fussing about adding cooler water to trigger spawnings, you can have as many *Corydoras* as you like!

<http://www.nettaigyo.com/corydoras/illust/papercraft/index.html>

From this website you can download templates from which to construct several species using the folding paper art of origami.

コリドラス ペーパークラフト Corydoras Paper models	
* ペーパークラフトの作り方 How to make Paper models	[1] [2] [3] [4]
1 Corydoras sterbai 	Download gif Corydoras Papercraft Sterbai 
2 Corydoras adolfoi 	Download gif Corydoras Papercraft Adolfoi 

Full, ‘how to fold’ instructions are also available to download.

Just click on the link below and start folding!



Many 'fish-widows' in the UK are very familiar with their fishkeeping husbands uttering the phrase 'I'm just going down the shed' at regular intervals throughout the day.

In Chicago, the ladies will know that they'll be away for some time as 'The Shedd' is the name of the city's famous public aquarium and not some convenient fish accommodation at the end of the garden.

Situated on the shoreline of Lake Michigan, the Shedd Aquarium was the gift of retail leader John G. Shedd to the city of Chicago although he only lived long enough to see the architect's first drawings for the aquarium; his widow, Mary R. Shedd, cut the ribbon at the official opening ceremony. The aquarium cost \$3,000,000 to build, and initially included 132 exhibit tanks. Groundbreaking took place on November 2, 1927, and construction was completed on December 19, 1929; the first exhibits were opened on May 30, 1930. As one of the first inland aquariums in the world, the Shedd had to rely on a custom-made railroad car, the Nautilus, for the transport of fish and seawater. The Nautilus lasted until 1959.

In 1930, 20 rail tank cars made eight round trips between Key West and Chicago to transport 1,000,000 US gallons (3,800,000 l) of seawater for the Shedd's saltwater exhibits. In 1933, Chicago hosted its second World's Fair, the Century of Progress and, as the Aquarium was located immediately north of the Fair's location, it gained exposure to a large international crowd.

In 1971, Shedd Aquarium added one of its most popular exhibits, a 90,000-US-gallon (340,000 l) exhibit reproducing a Caribbean Coral Reef. That same year, the aquarium acquired its first research vessel, a 75-foot (23 m) boat for exploring the Caribbean, manned by a crew to conduct field research and collect specimens. In 1985, this boat was replaced with the aquarium's current vessel, the *Coral Reef II*.

Compared to the modern, acrylic-tunnel equipped public aquariums of today (see last issue for Toronto's latest), The Shedd can only be described as 'stately' and/or 'majestic.'

Even as you stand in the interminable 'line' to gain entry (inside away from the icy blasts coming from the Lake) you feel extra privileged to be in such august surroundings, with separate exits from the ticket hall leading to a multitude of aquatic delights. We'll start with the Amazon.





A great display, complete with automatically-provided rain-forest conditions, suited these superb fish right down to their respective riverbeds!

The camera doesn't lie – this *Arapaima* really was this big!



There are plenty of tempting areas to explore, each having highly-informative display panels to answer all your 'What's that fish?' queries



The Caribbean display sits immediately beneath the Aquarium's Rotunda.





There was a wide diversity of fishes to see, including the now almost obligatory 'Jellies' although entry to this display along with some others is at extra cost.



At one time I believe the Shedd Aquarium held the record for the largest brood for a Livebearer – 377 Swordtails in one 'birth.'

As part of a wonderful shoreline park containing other Museums and Art galleries, do pop into the Shedd should you ever find yourself in the Windy City.

NEWS

NEWS

NEWS

CLASSIFIED ADVERTISEMENTS

The Bulletin is now taking Fully Aquatic Classified Advertisements

MARCH EDITION 2013 ONWARDS

Entries accepted only within the two weeks prior to the next Bulletin publishing date (coincidental with FBAS Assembly meetings), ie. the first weekend in March, June, September and December.

Entries will be **FREE** to members of affiliated FBAS Societies only.

All other advertisements priced at £5.00 per line and paid in advance.

Advertisements accepted at the Editor's discretion, whose decision will be final.

The idea is to help members who have unwanted fish for sale, surplus breeding stock or adult fish needing re-homing.

Along with live fish, aquatic items may be advertised but care should be taken with both live fish and aquatic items as the FBAS and Bulletin staff cannot accept take any responsibility for their condition.

It is hoped that both sellers and purchasers act in the true spirit of our hobby within their transactions.



FISH-HOUSE

FIRST AID

You may well feel first aid in the Fishhouse is avoiding cutting yourself on an aquarium glass cover or with the combination of electric and water giving you a shock from some faulty wiring.

Of course all these facts need real care when you are working in your Fish-house. However the first aid I would like to bring to your attention, is for the care of your fish.

Say you walk in to your Fish-house and it is stone cold, already some of your fish are looking very poorly. If everything is shut down, do you know where the electric mains is situated along with the fuse box? First you need to know the phone number of a qualified electrician and while you are waiting for him or her to arrive have you got some other form of heating? Maybe a fan heater that can work via an extension lead either from some other supply, or maybe next door can help. So why not be thinking ahead and let's hope what I have said does not happen to you.

However smaller, problems do happen and you should be ready for them.



You put your hands in one of your tanks and it's cold, the heater/thermostat has packed up and the aquatic shop is closed! "A replacement heater is a must."

So it is handy to have a spare of most things that add to the continuous upkeep of your fish. If you feel it's expensive to have new equipment just on hold then why not support your Club's Bring & Buy Sale and pick up some bargains?



A tale of two filters:

The internal filter and one of my tanks stopped working, so it was replaced by a spare.

Even an old, but still working external filter is always good to have as a stand by.



A piece of equipment not working?

The first thing to check is the fuse in the plug, and a jar of spare fuses should be your first port of call when tracing faults or a suddenly non-working device.

A slow-running spraybar can be due to a clogged filter sponge.



How much room does a packet of spare sheets of filter sponge take up in your fish-house cupboard?

These sheets are easily cut to fit any filter size; you can even roll the sheets up in a spiral for cylindrical, tall outside filters.



Out, damned Spot!

Medication to cover many types of illness that our fish incur, together with stress-relieving aids make our fishes lives that much more tolerable, and, should disease really strike, then

That spare tank you've been keeping for new fish may well seem a luxury, but it can really come in handy as a hospital tank.

Malcolm Goss



F.B.A.S
A.S.A.S

Open Show
Saturday 5th April 2014

At
Velmore Community Centre,
Falkland Road, Chandlers Ford,
Eastleigh, SO53 3BY

Championship Classes F & G-1
Memorij Class B

Judged to F.B.A.S Rules and Standards

Ask Us

Q. I have a small pond in which I have successfully kept Goldfish for a number of years. I am tempted to introduce Koi but would be grateful for some advice on the pitfalls.

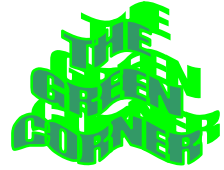


A. Many pond keepers become eager to keep Koi after enjoying some success with pond goldfish.

A pond that is designed to keep Koi takes into account that they grow large and create very high levels of waste compared to goldfish. They need a much deeper pond (with an associated filtration system) to ensure their winter survival, and often the idea changing an existing Goldfish pond to Koi use is neither practicable or successful. See "Build a pond for Koi" in the Autumn 2013 issue of the Bulletin.
Laguna Team of experts



The area for aquatic plant-lovers



Nymphaea thermarum

News that the smallest water lily in the world, grown at the Botanical Gardens Kew, had been stolen was reported in the Daily Mail on January 14th this year. This lily, smallest of its kind, is now believed extinct in the wild. This lily was kept in the Princess of Wales Conservatory and the theft took place between 8.30am and 2.55pm. Experts believe the culprits would have had to dig or pull up the plant from a shallow pond.

Nymphaea thermarum was discovered in 1987 in just one location, Mashyuza in Rwanda, Africa. However it seemed to disappear around two years ago due to over exploitation of a hot spring that kept the plants moist and at a constant temperature. The plant's native habitat was damp mud formed by the overflow of a freshwater hot spring. It became extinct in the wild when local farmers began using the water for agriculture that cut off the flow to the spring. An area of just a few square metres that was the lily's entire habitat then dried up.

Botanist Dr. Fischer sent some specimens to Bonn Botanic Gardens when he saw that their habitat was so fragile. The plants were kept alive at the gardens, but botanists could not solve the problem of propagating them from seed. However Carlos Magdalena, at Kew discovered the solution from his last 20 seeds.



After placing the seeds and seedlings into pots of loam surrounded by water of the same level in a 25°C. environment, eight began to flourish and mature within weeks. In November 2009, the water lilies flowered for the first time.



Nymphaea species typically germinate deep under water.

Nymphaea thermarum seeds are different, needing CO₂ in order to germinate.

Once Carlos Magdalena understood that difference, he was able to germinate the first seeds.

The last two surviving plants in Germany were eaten by a rat, but thanks to Magdalena at Kew these tiny plants will survive.

Kew Botanic Gardens 18/01/14

Photo: Carlos Magdalena

STARTING IN THE NEXT ISSUE OF THE BULLETIN

aquatic Brazil

The Amazon River runs across the width of Brazil and with its tributaries make up the area we know as the South American rainforest.

Today rainforests cover 6% of the world's land surface. This 6% contains no less than one-half of the world's species of plants, insects and animals. The Amazon is by far the biggest river in the world, it is 6,300 kl (3,900 miles) long and two of its many tributaries, the Rio Negro and the Rio Madeira, are the world's second and third biggest rivers.

About 20% of all freshwater discharged into the sea comes from the Amazon which with its tributaries drains some 7,000,000 sq. kl. (2,703,000 sq. miles). Almost half of the world's freshwater fish come from the Amazon River system. This enormous diversity includes several dozen species of Piranha and ranges from diminutive Tetras up to 3 metre (10ft) Catfish.

Log on to the FBAS Bulletin site, read and see more of this aquatic landscape.



Laguna

Beautifully simple water gardening

Water Gardener's Calendar

Here's a "month -by -month" of tips to make sure your water garden keeps in good condition during the next three months. We thank the team at Rolf C. Hagen for their help and tips that, with the aid of Laguna Water features and products, will not only make your pond more easier to maintain but look fantastic.

MARCH

During mild periods tidy up around the pond gathering up leaves lodged in the pond netting and remove other debris which has blown into the pond. This is a good time to clear any silt and debris that has accumulated at the bottom of the pond. The Laguna Pond Vacuum Kit uses the power of your existing water supply to dislodge and remove all types of pond dirt. When re-topping up your pond don't forget to add Laguna Water Prep to your pond water to eliminate chlorine, chloramines and other harmful heavy metals that may be in your water from the mains supply.

Turn off electrics and remove submersible pump that operates your filter, waterfall or fountain. Remove strainer and clean out debris and sludge. If you tie a length of strong string to the pump strainer secured it to the edge of the pond, you can lift out pump more easily. The pump should be checked at weekly intervals to remove build-up of debris and sludge during the summer months.

Finally check water quality using pH, ammonia and nitrite tests. This can build up during winter months with decaying leaves etc. at the bottom of your pond.

With temperatures not rising above 8°C/46°F, refrain from feeding your fish.

APRIL

Tidying up the pond can now take place in earnest. Start by lifting the pond net and clean it before storing it away. Marginal plants can be tidied up and if necessary divided into smaller plants by using the vigorous outer portions. All this needs to be done before summer growth starts.

This is a good time to re-invigorate plant growth by inserting Laguna Plant Fertiliser Spikes into your planting baskets. These will provide balanced nutrition for your pond plants throughout the season with no adverse effect on the water quality.

Clean filter media by flashing pond water through the filter and wash any sponge filters that may have trapped debris. Use a bacteria booster such as Laguna Bio Booster to build up strong colonies of beneficial bacteria in the filter. Also add to the pond water Laguna Bio Sludge Control, this will reduce the frequency at which to carry out a complete pond clean.

Mild winters have now been replaced by warmer summer temperatures often above 6°C / 8°C(43°F /46°F) and fish can be feed with Laguna Wheat Germ and, for larger fish, Spirulina Floating Food Pellets.

MAY

Now things are hotting up around the pond with temperatures 10°C/50°F even when it is cloudy. When the sun is bright in the sky it boosts the growth in submerged plants as well as marginal plant around the edge of your pond.

Water lilies are heavy feeders whilst flowering and it's important they receive proper nutrition. Laguna Pond Spikes are designed to release

fertiliser gradually to the plant through its roots and a number of these spikes may be used depending on the size of not only the plant but the basket the lily is growing in.

The pond water can also be dosed with Laguna Plant Grow, an aquatic plant food containing micronutrients in the form of vitamins and trace elements. Plant Grow contains no phosphates or nitrates and will not increase the presence of algae in the pond. Regular doses every two weeks throughout the summer months will ensure water lilies and other aquatic plants will thrive. With those hopefully lazy days of summer, when you wish just to sit by your pond and take it easy, along comes the first signs of green algae. Laguna Phosphate Control will control and compete against algae for vital phosphate nutrients, but takes a little time to build up the beneficial bacterial colonies. Barley straw has long been known by water gardeners for keeping pond water clear so why not use Laguna Barley Straw Pellets, so much better than rotting barley straw that make lots of mess in the pond.

Many owners overfeed their fish, they cannot help feeding every time the fish look at them when standing by the pond. This not only blocks up the filter quicker but will generate Ammonia, and other harmful gases within the pond water. Having a Laguna Master Test Kit or individual test strips will help you know the exact condition of your pond water. A 20% partial water change may well be necessary, but the real secret is not to over feed.

NAME THAT FISH!



**Answer on
page 39**

NEW RANGE OF FLUVAL SEA MARINE SUPPLEMENTS

By Les Holliday



The Fluval Sea range of superior marine products suitable both for the novice and serious marine aquarist alike, continues to impress as the array of new products grows. One of the most recent introductions has been a range of Fluval Sea Marine Supplements. Formulated with high quality, pure ingredients, these essential additives are designed to replenish and restore the balance of elements that are regularly depleted in reef aquariums and ensure that captive marine tank inhabitants enjoy ocean-like conditions.



Before considering these supplements in more detail, however, let's first look at the role played by partial water changes using marine salts like Fluval Sea Marine Salt in creating an optimal aquarium environment both for corals, other invertebrates and fish to thrive in. Fluval Sea Marine Salt is ultra-pure and ultra-consistent marine salt, based on a professional grade formula which blends all the ingredients required to achieve natural sea water concentrations with enriched levels of calcium and buffering capacity.

Partial water changes using Fluval Sea Marine salt mix can produce an ocean-like aquarium environment enriched with a high calcium level and is a practical means of instantly raising the calcium level. The main purpose of periodic water changes using sea salt mixes though, is their main function as a means of managing the accumulation of nitrate, phosphate and other polluting organic substances and to maintain adequate pH levels. The tendency over time is for the aquarium to become less salty also due to the use of protein skimming and activated carbon plus salts can be lost by spray released by splashing and popping of bubbles on the tank water surface. Carefully managed salt mix water changes are therefore an excellent means of replenishing and maintaining a stable S.G and tackling all of these other problems.

Fluval Sea Marine Salt, used monthly to undertake water changes of 10 to 25%, will provide excellent results in creating an optimal ocean-like aquarium environment for reefs and other marine aquaria. The high chemical specification of these salts also ensures that the strength of the mix on first opening the pack gives an S.G of 1.026 which is higher than rated on the packaging to avoid possible humidity intrusion lowering the salinity level. This higher salt level actually provides something of a bonus in producing more salt water than rated on the packs when mixed at the normal S.G of 1.023.

Other parameters are equally generous with alkalinity rated at 2.9-3.5(meg/L), calcium at 460(ppm), magnesium 1250-1350(ppm) and strontium 8-12(ppm). The magnesium content is imported from the Red Sea, the recognised best source for Magnesium chloride and the other ingredients from Canada and the USA.

Whilst water changers using a salt mix with high calcium levels and additional buffering capacity can be a practical means of raising calcium levels quickly and maintaining an inexpensive calcium and alkalinity maintenance system it may not fully be able to keep up with the demands of growing corals. The saturation level of calcium carbonate can drop rapidly in a closed system aquarium with strongly growing corals and coralline algae and additional means are often necessary to meet the demand. The Fluval Sea new range of supplements includes three different treatments designed to overcome any problems in this area.



Fluval Sea Calcium is a concentrated form of calcium that is easily absorbed by corals and other invertebrates in order to grow a strong skeletal structure whilst not affecting the delicate ionic balance in marine aquariums. Produced using pharmaceutical grade Calcium chloride ensures a pure product and an absence of unwanted contaminants. Working directly in line with Fluval Sea Calcium is Fluval Sea Alkalinity a concentrated alkalinity-boosting compound that provides an important energy source for strong coral growth and plays a key role in maintaining optimal pH levels. Using pharmaceutical grade Sodium bicarbonate, again free from unwanted contaminants,



Fluval Sea Alkalinity raises and maintains alkalinity and regular doses are recommended to offset constant depletion by corals, coralline algae and any buffering requirements in order to maintain optimum pH levels. The third of these treatments is also designed to support optimal pH and strong coral growth by managing levels of magnesium.



Fluval Sea Magnesium raises and maintains magnesium levels effectively whilst not affecting the delicate ionic balance in marine water. Working in line with the bicarbonates introduced in adding alkalinity, magnesium has a very important influence on the continuous buffering process.



As an alternative to supplementing the aquarium water with separate additives there is also Fluval Sea 3-Ions Supplement which is a concentrated blend of 3 essential ions, calcium, magnesium and strontium at proportions that maintain optimal ionic balance. The addition of strontium to this formulation further enhances the process of helping improve growth rates of corals and other invertebrates such as molluscs, clams and tube worms and enhances the calcification of corals and coralline algae. It is strongly recommended therefore to offset constant depletion by coral growth and like all other Fluval Sea supplements contains no gluconates, nitrates or phosphates and is free of unwanted contaminants. This supplement is also available as Fluval Sea Strontium a concentrated form of strontium that is easily absorbed by

corals for strong skeletal structure and tissue retention.

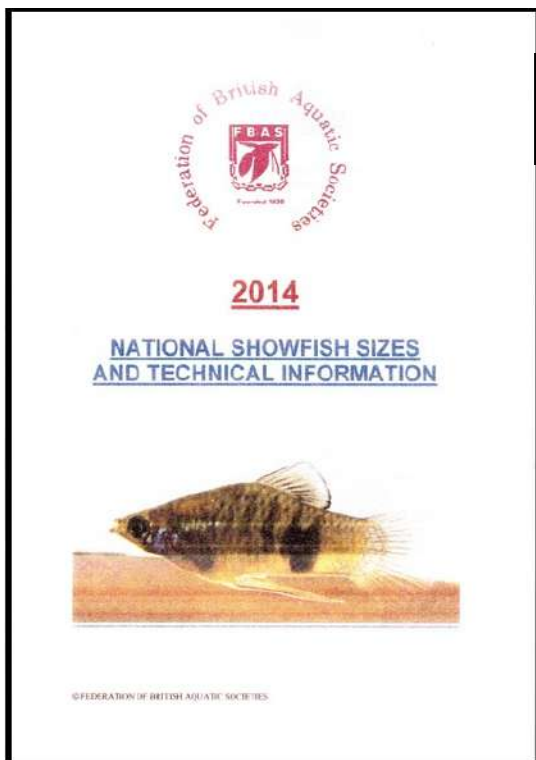


Two more forms of supplements remain, Fluval Sea Iodine and Fluval Sea Trace elements. Iodine is found in ocean waters at a concentration of around 0-06ppm. Fluval Sea iodine is formulated using two naturally occurring iodine compounds in correct proportions. It contains high quality and ultra pure Calcium iodate and Potassium iodide at the proportions found in natural Sea Water. It is strongly recommended to offset the rapid depletion of iodine by protein skimming, coral and coralline algae growth and oxidizing interactions.

Finally, Fluval Sea Trace Elements contains a concentrated blend of 11 key trace elements naturally found in salt water. A guaranteed analysis shows the following; Zinc (Zn) 10mg/L, Iron (Fe) 10mg/L, Molybdenum (Mo) 7mg/L, Nickel (N) 3mg/L, Copper (Cu) 3mg/L, Vanadium (V) 2mg/L, Manganese (Mn) 2mg/L, Cobalt (Co) 0.4mg/L, Selenium (Se) 0.1mg/L, Chromium (Cr) 0.05mg/L and Beryllium (Be) 0.0005mg/L. Trace elements such as these are often referred to as micronutrients as they are essential for many metabolic functions in plants, animals and micro organisms despite the small concentrations in which they occur in the sea.

Manganese, for example, is essential for chlorophyll formation and is required by algae including the zooxanthellae associated with corals and tridacnid clams. Because there is no doubt that trace elements play a key role in the essential biological processes in marine aquaria it is strongly recommended that regular dosing of these important supplements should be a necessary part of any marine aquarium maintenance regime in order to offset constant depletion of trace elements by protein skimming, chemical filtration and ongoing deterioration of biological processes.

The Fluval Sea Marine Salt and the range of Fluval Sea Marine Supplements are designed to meet stringent stability requirements while ensuring perfect balance in replenishing and restoring elements that are regularly depleted in marine aquariums allowing your marine tank inhabitants to enjoy ocean-like conditions.



THE '2014 BIBLE' IS OUT!

Exhibitors should be on the look-out for the latest edition of the 'SIZE BOOK.'

The 2014 issue of this indispensable guide to sizes of species likely to turn up on the Open Show benches will be available for sale at selected Open Shows.



During mid-February, BBC television showed highlights of the Orchids on show at the Royal Botanic Gardens, Kew for a limited time, this being from 8th February to 9th March.



This exhibition was within the Princess of Wales Conservatory, where we discovered an escape to a tropical floral paradise with many of the plants retracing a journey through time. The displays featured many of the intrepid Victorian plant-hunters and their modern-day counterparts.

For those with an interest for freshwater tropical displays you will not be disappointed, and these are also housed in the Princess of Wales Conservatory. This glass-house of modern clean straight lines is in total contrast to the many Victorian conservatories including the Palm House that are spread about the gardens.



Whilst there are large aquariums with tropical fish and plants you can also walk round very large ponds that not only contain very large Catfish and Barbs but many species of plants including the Giant Water Lily, *Victoria amazonica*. Note: The Lily House re-opens for Summer at the beginning of April.



Descending to the lower ground floor via concrete steps, you can view more freshwater fish through three large porthole windows.

However for these dedicated weeks the Orchids take centre stage, the work in arranging the fantastic plants is a sight to behold, however it's only a few weeks in a year, after which the humidity of this undercover rainforest will be back to normal.



Below ground floor of the Palm House is what is now called the Marine Aquarium. You reach this by descending a iron spiral staircase situated in the centre of this truly fantastic glass house that made Kew Gardens a World Heritage Site on the 4th July 2003.





At that time the aquarium contained many more freshwater tropical displays but today, with the exception of one or two tanks, the remaining aquariums and the centre display are a must for the Marine enthusiast.



Royal Botanic Gardens,
Kew, Richmond,
Surrey TW9 3AB

email: info@kew.org
visitor information line: 020 8332 5655



ANSWER: A Sawfish, *Pristis pectinata*

BANK HOLIDAY FAMILY PET SHOW

THE URBAN FARM PROUDLY PRESENTS



EMPRETS AND EMPRAWS

FUN FAMILY PET & DOG SHOW



MONDAY 26TH MAY 2014 GENERAL ADMISSION FROM 10:30AM // DOG SHOW FROM 11AM // PET SHOW FROM 2PM // CLOSE 5PM

URBAN FARM, FAGGS ROAD, FELTHAM, GREATER LONDON TW14 0LZ

All pets are welcome to enter and everyone that takes part will be leaving with either a certificate, a rosette or a much coveted 'Best in Class' trophy



Admission:

Adult	£6.50
Kids	£5.50

kids with pets entered into the show go free
(as long as they are accompanied by an adult)

For Equiries and Further Info:

Please contact Lisa of Emprets & Empraws
Mobile: 07585 048 406
Email: empretsandempraws@gmail.com
Full T&Cs, news and updates can be found online at
www.empretsandempraws.co.uk

Attractions:

- 🐾 Urban Farm tours
- 🐾 BBQ
- 🐾 Trade stalls & pet merchandise
- 🐾 Refreshments
- 🐾 Bouncy Castle
- 🐾 Luxury ice cream seller
- 🐾 Face painting
- 🐾 Donkey Rides
- 🐾 Photographer
- 🐾 Raffle and Tombola



PLEASE FILL IN, CUT OUT AND RETURN THE ENTRY FORM ON THE BACK OF THIS FLYER TO ENTER YOUR PET INTO THE PET SHOW

PET SHOW CLASSES

Dog Classes

- 1 Best Cross Breed
- 2 Best Rescue Dog
- 3 Best Veteran Old Dog
- 4 Dog the Judges Would Most Like to Take Home
- 5 Prettiest Bitch
- 6 Most Handsome Dog
- 7 Dog Most Like Its Owner
- 8 Best Puppy
- 9 Fun Agility Assault Course

Pet Classes

- 10 Guinea Pigs
- 11 Hamsters
- 12 Mice
- 13 Rats
- 14 Chinchillas
- 15 Rabbits
- 16 Reptiles and Exotic Animals
- 17 Birds
- 18 Cats



All 1st place winners in each class will be entered into a 'Best of Show' category.

The coveted overall Best Dog and Best Pet will be selected from these finalists at the end of the day.

Disclaimer:

All owners are responsible for their pets at all time and neither Urban Farm or Empreys & Empraws will be held responsible for any, injury or damage to property resulting from unsupervised and or uncontrollable animals



Please cut along the dotted line and return to Urban Farm, Faggs Road, Feltham, Greater London TW14 0LZ.

Entry Form:

Name: _____

Type of pet: _____

Class Number: (please choose from the options above) _____

Email Address: _____



Hobbyists can now enjoy another aquatics-related competition during 2014.

Get your cameras out and snap away at any aquatic subject and enter the Federation's Photographic Competition.

HOW IT WORKS This Competition can be operated at two levels: at Open Shows or at Society Meetings (for Societies not holding Open Shows). The result is the same – the best three photos become eligible for the Photographic Competition Final at the Festival of Fishkeeping.

At Open Shows: Add the Photographic Class to the Show Schedule. Judging can be undertaken as the host Society determines, it needn't be an FBAS Judge. Send details of the three best winners to the FBAS for registration as entries in the Final.

At Society Meetings: Include The Photographic Class as an activity at your Society's meeting. Again, judging can be undertaken as the host Society determines. Send details of the three best winners to the FBAS for registration as entries in the Final.

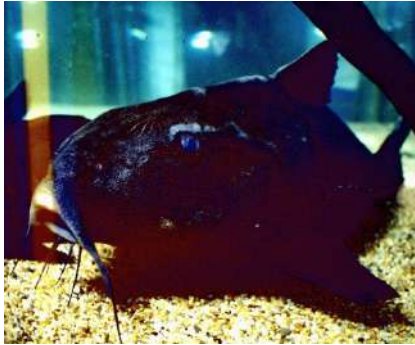
CATEGORY: There is a single category - any aquatic subject.

CONDITIONS An Entry to the Final shall comprise of photos which must have qualified EITHER through an Open Show OR from a Society Meeting. Qualifying entries from multiple Open Shows will be allowed.

For the Final, photographic prints must be 8" x 10" versions of the original to ensure good presentation for Judges and visitors alike. Obviously, with today's digital capabilities the size of photos is easily adjusted, and entries at the earlier 'qualifying rounds' need not necessarily conform to the 'Final' size.

Whilst copyright remains with the owner of the entry, the FBAS reserves the right to use copies in any promotional context before and after the Festival.

DOWNLOAD RESULT/ENTRY FORM FROM 'TOP FORMS' ON WEBSITE
www.fbas.co.uk/FORMS.html



"BIG, BAD & UGLY"

This year the Festival is introducing a new Class to attract visitors to the Show to see fish that they would not see at their local aquatic retailer. This Class is for large fish, and it is hoped some suitably-sized tanks will be available, for those exhibiting fish who would qualify, on a 'first come, first served' basis.

So, if you do not have an entry, keep this Class in mind when you are looking around the shops. This Class may well have two winners, one judged to FBAS standards and a second winner chosen by the public vote - on what they like, or don't like!

ENTRIES TO: Malcolm Goss email: malcolmgoss@tiscali.co.uk



Festival of Fishkeeping 4th & 5th October 2014

**Hounslow Urban Farm, Faggs Road,
Feltham, Middlesex TW14 OLZ
(www.hounslowurbanfarm.co.uk)**

Festival Updates - March 2014

As is the Federation's policy, each new Festival simply has to be different from the previous one with new attractions wherever possible. This year, it is the exhibitors who may 'Spot the Difference' more easily than the casual visitor.

A theme for this year will feature three distinct displays **for Livebearers, Bettas and Killifish**. These displays will be on show for the whole two days of the Festival and exhibitors will be asked if they wish to sell their exhibits at the end of the Show.

The Festival Open Show to be held on the Saturday will, therefore, lack Classes **N o-t, O, P, Q, R, S, T** and **X o-t, Ea** and **F**, but still feature the main basic Classes and the traditional 'splits' in **Characins** and **Cichlids**.

The two Nano and Society Furnished Aquarium Competitions will be featured as in previous Festivals.

The Family Pet Day, details of which you may have read earlier in this issue, will also be a new feature at the Festival.

Finally, it is recommended that Exhibitors and visitors to the weekend again use the **Travelodge, Sunbury, Hanworth Road, Sunbury On Thames, Middlesex TW16 5DA**

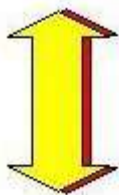
To obtain reservations, bookings **MUST BE MADE ONLINE** via the **Travelodge website** – www.travelodge.co.uk

EVENTS DIARY 2014

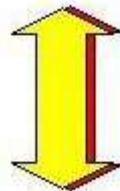
(full details can be found on FBAS website www.fbas.co.uk)

OASIS Auction		16/02/14
GLENROTHES A.S. Auction		16/02/14
FBAS ASSEMBLY		01/03/14
CASTLEFORD A.S. Night Auction		19/02/14
DERWENTSIDE A.S. Open Show & Auction		09/03/14
CATFISH STUDY GROUP COVENTION		14-16/03/14
DJAY Open Show & Auction	(G, Ta) L	23/03/14
EASTLEIGH & SOTON A.S. Open Show	(F, O a-q) B	05/04/14
ASHBY A.S. Open Show & Auction		06/04/14
Gt MANCHESTER CICHLID GROUP Auction		06/04/14
WEST LONDON BKA Auction		06/04/14
MID-SUSSEX A.S. Open Show	(C, W)	13/04/14
NORTH EAST FISH FORUM Show & Auction		27/04/14
A of A Auction		04/05/14
BRITISH CICHLID ASSOCIATION Convention		4-5/06/14
BRADFORD A.S. Spring Open Show & Auction		11/05/14
LONDON PET SHOW		17-18/05/2014
GLENROTHES A.S. Open Show & Auction		18/05/14
RYEDALE A.S. Open Show & Auction		18/05/14
SOUTHEND, LEIGH & D.A.S. Open Show	(La, S)	24/05/14
Gt MANCHESTER CICHLID GROUP Auction		01/06/14
PORTSMOUTH A.S. Open Show	(H, U)	01/06/14
STAMPS Open Show & Auction		01/06/14
FBAS ASSEMBLY		07/06/14
BRACKNELL A.S. Open Show	(P, Cb) M	08/06/14
YAAS Open Show		15/06/14
HOUNSLOW & D.A.S. Open Show	(Da, Q) C	21/06/14
OASIS Auction		22/06/14
CORBY & D.A.S. Open Show	(Dc, O s-y) E	29/06/14
SCCRS Open Show		06/07/14
CASTLEFORD A.S. Catfish & Loach Show		13/07/14
PORT TALBOT A.S. Open Show	H	17/07/14
N.E.YORKSHIRE GROUP, BKA Open Show		20/07/14
SOUTHERN COUNTIES CICHLID GROUP Convention/Auction		20/07/14
TTAA Fish Only Auction		27/07/14
LEICESTER A.S. Open Show & Auction	G	03/08/14
FRIENDS OF YORKSHIRE A.S. Open Show & Auction		10/08/14
PERTH A.S. Open Show & Auction		10/08/14

THREE COUNTIES Open Show	17/08/14
CASTLEFORD A.S. Night Auction	20/08/14
NORTH EAST FISH FORUM Auction	24/08/14
FBAS ASSEMBLY	06/09/14
THREE-RIVERS Championship Show & Auction	07/09/14
FSAS Auction	14/09/14
WEST LONDON BKA Auction	21/09/14
Gt MANCHESTER CICHLID GROUP Auction	28/09/14
FESTIVAL OF FISHKEEPING Hounslow Urban Farm	04/10/14
DERWENTSIDE Auction	12/10/14
SAF	19/10/14
STAMPS Auction	26/10/14
BRADFORD A.S. Open Show & Auction	10/11/14
A of A / SCCRS Auction	16'11'14
CASTLEFORD A.S. Night Auction	19/11/14
OASIS Auction	23/11/14
FBAS ASSEMBLY	06/12/14



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