

100 Years of Fishkeeping

by Dr David Ford, VP Northern Goldfish & Pondkeepers Society

As we enter our second half century as an aquatic society, I thought it would be interesting to review just how much our hobby has changed in the last century.

Aquariology

Of course, keeping fish in captivity started thousands of years ago, but it was our very own London Zoo that was the first in the world to build a public aquarium. That was over 100 years ago (1853 actually) but the concept of using glazed iron frames as aquaria was first seen in Britain's 'Great Exhibition' of 1851. This revelation (the iron tanks were originally designed to house exotic plants on long sea voyages from the far flung parts of the British Empire). The Victorians obtained these tanks for keeping petfish in the home – even for tropical fish species by having a metal plate base under which a candle would keep the water heated.

By 1900 there was even a Royal Aquarium. This was built in 1876 opposite the Houses of Parliament but no fish were installed before it was demolished in 1902 to build the current Westminster Central Hall. Across the river Thames there is now the London Aquarium in County Hall – one of the largest public aquariums in Europe.

Back in the 1900s the Germans noted the Victorian innovations and they adopted the iron-frame aquarium with Hamburg becoming an important centre for the importation of exotic fish via their sea trade. Berlin Zoo (opened in 1844) built a public aquarium in 1913 (and still active today).

The greatest breakthrough came in the early 1980s when it was found that Silicone Sealer could replace putty for glazed frame tanks. The building trade compounds are toxic to fish but manufacturers soon offered a safe aquarium quality. It was then found that the Sealer could glue the sheet glass together, dispensing with the need for an iron frame. This made the standard home aquarium much lighter and the traditional 24x12x12 inch tank became the more popular 36x15x12 inch (the empty weight of which a man could comfortably carry – and home furniture could support).

Even glass is heavy and the public aquaria of the world developed the plastic tank for their giant aquaria. Acrylic was the ideal material because of its clarity and strength. Hundreds of new public aquaria opened in the last quarter century in every developed country of the world using acrylic sheet and Silicone Sealer to display their fish in many novel ways, with walk-through (even moving walkways) aquariums. This idea was adopted by the hobbyist and plastic aquaria became common in the 90s, from Goldfish Bowls to Tubular Tanks for a living display in the 'Ideal Home'.

Tropicals

My first tropical aquarium was in the 50s when a glazed metal framed aquarium with a slate bottom could be bought. This allowed a tiny oil lamp to be installed under that slate to maintain the water at a tropical temperature. The system worked quite well providing the oil lamp was properly maintained and I successfully bred Guppies with this method.

Early in the 1900s Direct Current electricity was installed in the homes of wealthy Edwardians. But not until the 1950s was the change from DC to AC current completed for British homes and the technology was then available to use thermal strips for controlled heating. With DC these gadgets would burn out, but AC meant a clean break for an 'on and off' and so the bimetal strip in a glass tube heater-thermostat was born.

With that heating system there was a boom in tropical fishkeeping and imported wild fish from South America arrived via the new airfreight trades. Special aquatic shops, rather than just pet shops, started to open importing these exotic fish and the equipment needed to keep them alive. But even AC operated thermostats sometimes burnt out – or stuck permanently 'on' killing valuable (and then expensive) petfish.

It was also in the 60s that the microchip was developed (actually 1958 for the first one) and so the technology was available to replace the bimetal strip with a more reliable heating control for the tropical system. The manufacturers' research people took another 20 years though to exploit this potential. I developed one such heaterstat in the 80s, within the 'Atlantis' range, called 'Capricorn' which was a heating coil buried in a plastic plate controlled by a microchip pre-programmed to heat only to 26 degrees C. Never launched beyond a test market in England, so if you have one, it will become a collectors' item.

Another 20 years on and digital heaterstats, such as the Rena SmartHeater (with resin replacing glass) are available. The original bimetal strip heaterstats are still sold because they are cheaper and reliability has improved with new materials. But the future is digital!

Lighting

The Victorian aquaria must have been lit by candle light (over the top rather than underneath!) or oil lamps. Canada's Woodward and Evans patented an incandescent light bulb back in 1875, but it was Thomas Edison of the USA who developed the idea a few years later – and then the world was lit up by electricity.

The filament bulb was the natural choice for aquarists to place over their tanks in the 50s and 60s. Very successful they were too because the energy level of the photons the incandescent bulb emits is ideal for photosynthesis. Hence aquarists could become water-gardeners too. The furnished aquarium had arrived, with themes

such as an Amazonian scene with forests of Vallisneria under blankets of Azolla.

The tradition was to use one, two or more bulbs fitted sideways inside a metal or wooden box 'hood' of 25, 40 even 100 watts. The socket was protected from condensation and splashes by adding a short piece of bicycle inner tube to cover the fitting – we all did it. The problem was that these bulbs generated a lot of heat and the 'sagging' filament had a short life. So those R&D (research and development) teams soon offered the trade the 'new' fluorescent tubes. Not all that new actually, the fluorescent tube was invented by Edmund Gurmer back in 1926 but USA's General Electric developed the lighting in 1938.

Initially the typical warm-white tubes from office lighting were sold but aquarists soon found that the photon energy was not right for aquatic plants. They needed the (to our eyes) blue light (wavelength 400 to 450nms) that penetrates water as well as the yellowish light (500nms) of the overhead tropical sun. Fluorescents with specific wavelengths were marketed by the late 80s and early 90s with names such as Triton, Beauty Light, Coralife, Aqua Glo, Aquastar etc.

The tubes also became thinner and so easier to fit – this was based on the number of 1/8ths of an inch diameter, i.e. T5 is thinner than a T8 – and a longer life. The traditional fluorescent light can halve its output (Lumens) in just 6 months. We may not notice, but the plants do. The phosphor used within the glass tube is now chemically fixed in place to prevent migration (the cause of fading) and lifespan of 5000 hours are guaranteed with consistent Lumens output.

Now it is 2010 and yet another change is on the way – to become 'green' energy saving Halogens with low voltages are being fitted to aquarium hoods. But the future is LEDs, already being sold as clip-over units.

Aquarists

The fish haven't changed in millions and millions of years, let alone 100. But the people have. Like all good Britons, as soon as a hobby became popular (and fishkeeping is indeed one of the top hobbies) they formed a club. I haven't found a 100 year old fish club, but many, like ours, are 50 years old and the major association – the Federation of British Aquatic Societies (FBAS) – celebrated 70 years in 2008. It was in the late 40s and early 50s that most towns and cities formed their own local fish club. They became affiliated to the FBAS so they could get information and certificated judges for the popular 'Open Shows' where aquarists displayed their prize-winning pet fish.

Over 300 societies were registered by the 60s and 70s. Then, like all committees the world over, they split into geophysical or political groups. The AofA (Association of Aquarists) formed in competition to the FBAS. Scotland formed their own association, the FSAS (Federation of Scottish Aquarist Societies) and they too eventually had competition with USA (Union of Scottish Aquarists). Northern England felt neglected and formed their own Federation of Northern Aquarium Societies (FNAS) – but this was centred in Lancashire, which was the wrong side of the Pennines, so Yorkshire went their own way and formed the Yorkshire Association

of Aquarist Societies (YAAS). The War of the Roses continues. Wales, Ireland (back then the aquarists association included Northern Ireland and Eire) even Cornwall, formed their own groups.

The associations then held their own Open Shows which grew in the 80s into huge affairs. The FBAS occupied Alexander Palace with fish competitions and member clubs built tableaux for fame and prizes. The aquarium industry attended with stands for marketing or sales and they recruited the 'Top Aquarists' for advertising. The YAAS responded with an annual Yorkshire Aquarists Festival at the Doncaster Racecourse. FNAS held theirs in Manchester with the British Aquarist Festival. These national shows attracted prize-winning fishes and so awards such as Champion of Champions (at BAF) and Fish of Fishes (at YAF) were created. These fish and their proud owners appeared in many adverts in the aquarium magazines of those times.

The national shows survived into the 90s with attendances over a two-day weekend numbering more than 10,000! Then people changed. The costs of travel increased dramatically, the cost of renting the venues inflated and by the turn of the century the Internet had arrived with instant information. No need to spend money travelling to Fish Shows for help with your hobby.

Some shows have survived to 2010 – the FBAS now occupy a holiday village at Hayling Island for a weekend in October each year. Their Supreme Championship is still awarded and industry attends with stands of their products. The FNAS's Champion of Champions is also awarded but now at a small one-day Open Show in Darwin. Yorkshire still has a Fish of Fishes, but at a village Show at Stockton On the Forest (near York) in July each year. No longer do thousands attend just a few devoted aquarists who are fanatical about their fish.

As the local aquarium clubs declined, the popularity of a different type of fish club developed – the specialist society. The lovers of Catfish formed the Catfish Association of Great Britain which has evolved into an international group (CSG, Catfish Study Group) who hold an annual conference at a Preston Hotel each year with guests from around the World. There is a Killifish Society, the British Cichlid Society, a Livebearers Group, the Anabantid society, several marine groups and of course the Goldfish lovers – the GSGB (Goldfish Society of Great Britain), with its Midland cousins AMGK (Association of Midland Goldfish Keepers) and Northern cousins the NGPS (our very own Northern Goldfish and Pondkeepers Society). With Internet pages, video conferencing, email connections and often home meetings, these are the fish clubs of the future.

Industry

As the hobby of fishkeeping developed over the last century, so the industry grew to cater for the hobbyist's needs. There are many small firms specialising in ornamental fish imports or breeding, aquatic plants, aquariums and their accessories. Some firms have grown to international status, driven by the competition of the capitalist system. Mars – the largest privately-owned group of companies in the world – have their own unit devoted exclusively to fishcare (indeed,

called 'Mars Fishcare') with their own research units. Germany's 'Tetra' and 'Sera' brands are now global; Canada's 'Hagen' products are sold world-wide. The USA has 'Wardleys', 'Penn-Plax', 'Jungle', 'Mardel', 'API' and more, and Japan exports 'Hikari' by 'Kyorin'.

British companies include 'Interpet' and 'King British' and more. All usually sell fish foods and water treatments, remedies and accessories. Complete aquarium systems can be found where all you need do is fill with water, plug-in and switch-on. Then (later, of course) decide what fish to install. This sophistication has changed the hobby over the last half of our hundred years. Earlier times, the hobby was male orientated since one had to be a carpenter, electrician and biologist as well as a DIY enthusiast. Now the aquarium can be an easy-to-install living ornament making it attractive to the ladies. One obvious result of this change is the appearance of fish foods on the supermarket shelves.

That fish food too has changed over 100 years – initially it was table scraps and then it became crumbs and dried ant eggs some 50 years ago. Now it is flake, tablet, sticks, granules, pellets, powder, frozen, freeze dried, irradiated and live!

The industries making all these products have their own controlling bodies where the members agree to a code of ethics for their businesses. Here in the UK we have OATA (Ornamental Aquatic Trade Association – since 1991) and internationally there is OFI (Ornamental Fish International – since 1980). The latter covers 44 countries.

International trade shows take place too, so large and complicated they are biannual such as 'InterZoo' in Germany and 'Aquarama' in Singapore. In the UK the pet trade shows such as PATS (Pet & Aquatics Trade Shows) take place annually in the South and North of England. There will be a specifically aquatic trade show called 'Aqua2010' this year (October 6th & 7th) at the International Trade Centre in Telford (West Midlands).

The Fish

Actually it is not strictly true to say that all fish have not changed in the last 100 years. For tens of millions of years they lived happily in their own way until man (meaning woman too, of course) came along and started to eat them.

Man then domesticated some species, especially Carp, and developed goldfish and Koi for ornament. But it is within the last 100 years that the most changes can be seen as captured wild species are bred in captivity for the ornamentals trade. The fish farms of the Far East and Southern USA developed rapidly after the 50s and 60s created that market. Pet fish is now the top export earner for Singapore. Jungle fish farms are numerous in Malaysia, Indonesia and Thailand. Israel, Italy, Japan and Chinese fish farms mass-produce and export ornamentals, especially goldfish and Koi.

At the beginning of our considered century there were more fish aboard the sea-going liners than passengers, but now there are more flying fish than

people. Popularity polls by various aquatic publications vary slightly but the top ten are always goldfish, angels, tetras, guppies, mollies, swordtails, platys, zebras, corydoras catfish and Koi.

Despite global warming, pollution, even wars, their future seems assured.

Conclusion

100 years has seen dramatic changes in almost everything in our world – including the fascinating and rewarding hobby of fishkeeping. My father (who was also an aquarist) told me how great it was to look into the fish's silent and peaceful world. To view their grace and beauty. I in turn told my children, and then my grandchildren, now my great-grandchildren, the same story. I also explain that ever-evolving technology will continue to help our hobby, so the future looks great, but never forget – you are their god.

To read more of fishkeeping history visit these websites:

www.ifocas.org IFOCAS is the International Federation of Online Clubs and Aquatic Societies who are dedicated to the promotion of the fishkeeping hobby worldwide.

www.yorkshireaquaristsociety.co.uk and click on 'badges' to see a collection of British Fish Club badges from the last 50 years.

www.fbas.co.uk for the latest news on shows and club meetings in the UK fishkeeping scene.

www.scottishaquarist.co.uk for our Scottish members.

100 years ago there was only London Zoo Aquarium (and the Royal Aquarium with no fish)...now there are 30 Public Aquariums in the UK where you can visit and marvel:

Alton Towers Aquarium

Anglesey Sea Zoo Aquarium of the Lakes

Blackpool Sea Life Centre

Blackpool Tower Aquarium

Blue Planet Aquarium

Blue Reef Aquarium

Bolton Museum Aquarium

Bournemouth Oceanarium

Brighton Sea Life Aquarium

Bristol Zoo Aquarium

Chester Zoo Aquarium

Deep Sea World

Exploris, N.Ireland

Great Yarmouth Sea Life Aquarium

Lake District Coast Aquarium

Liverpool World Museum Aquarium

London Aquarium

London Zoo Aquarium

Macduff Marine Aquarium

National Marine Aquarium

National Sea Life Centre

National Seal Sanctuary

Oban Seal and Marine Centre

St Andrews Aquarium

Scarborough Sea Life Centre

The Deep, Hull

Underwater World at Birdworld

Underwater World, Hastings

Weymouth Sea Life Park

Most have websites where you can get more details – just Google.



My home aquarium – the modern tank is a piece of furniture as well as a living ornament



My pond – a triple pond system with Japanese Koi

28th April 1985 – launch of Atlantis range at
British Pet Trade Fair, Harrogate



No longer available – the Atlantis range that I developed over the years 1983 to '85 was a success, but it was replaced by the Aquarian Range of equipment in the 90s.



Modern equipment for the aquarist is both efficient and well-designed