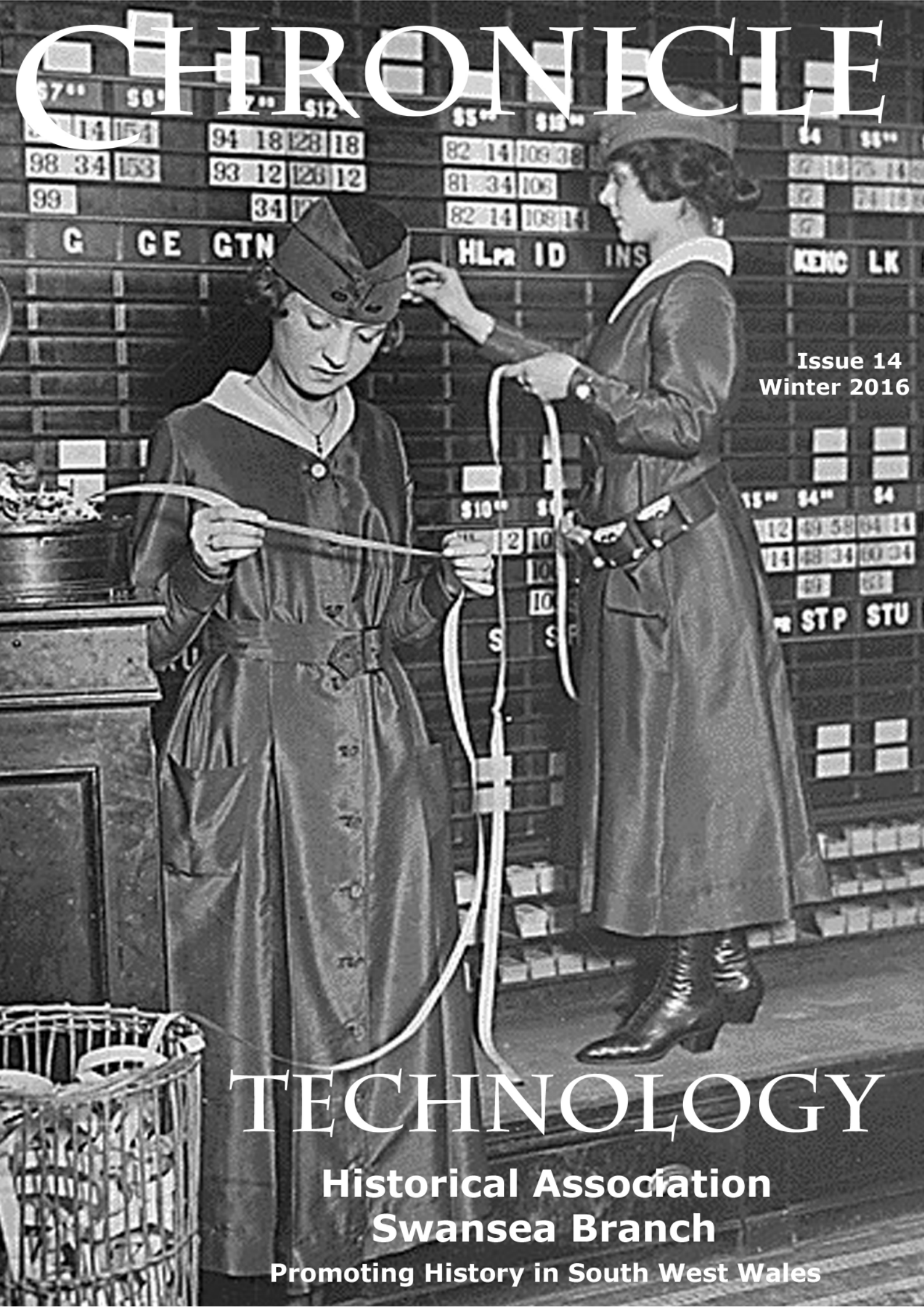
# CHRONICLE



Issue 14
Winter 2016

# TECHNOLOGY

## Historical Association
## Swansea Branch

**Promoting History in South West Wales**

# Issue 14 Winter 2016

# Technology

## Contents



The Great inventor

Ticker tape machine

Gwynfe
parish Church

Cover photograph : Watching the Tickertape 1918 in the Waldorf-Astoria New York/

# From the Editor

margaret.mccloy@sky.com

It has become appallingly obvious that our technology has exceeded our humanity.
Albert Einstein

Technology, where to start? Why not with the cavemen? I'm guessing they had to work out the best way to make the perfect club and deadly sharpened stone for catching prey in forests and rivers. The use of flints in making fires would have been the big discovery and those flints would also have helped to skin and clean the pelts of their catches so they could both eat well and keep warm.

Tme passes, technologies change. Clubs and flints became bows and arrows then became rifles and guns. Coal and gas were discovered as ways to keep warm, light a fire and cook the food.

Electricity replaced candles and oil lamps for lighting the room. Fur coats could be bought from a Harrod's catalogue. Messaging was achieved with the Royal Mail. Postcards and letters were written and delivered the same day.

We no longer have to forage for food or kill for our supper. Animals are bred and delivered to the shops ready for the table and delivered to our kitchens ready for us to cook. No more lighting fires, we now have microwaves and electric ovens. Fur or fake fur coats can be ordered by mobiles.

Messaging changed thanks to Graham Alexander Bell inventing the telephone. Few people considered Bell's invention more than a toy. Richard Valentine built one of the first switchboards in the country to connect three phones.
He visited Milwaukee to present the possibilities of the telephone to manufacturers there, to connect their businesses, factories, and warehouses. These men did not see, however, the use of the telephone. Valentine was laughed out of town.

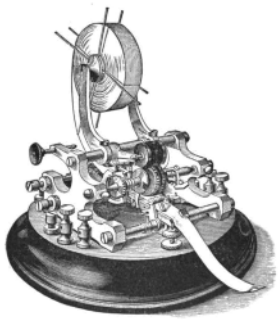
In 1890, there were less than three telephones for every thousand people in Wisconsin. In 1926, there was a telephone for just over five inhabitants. At dinner last week, between the four of us around the table, we had five mobiles and a land line.

12.4 billion telephone calls and 144 billion emails are sent every day.

But some of the old technology still exists. The most popular sport in Britain is fishing, and men and women still come home after a day's angling with freshly caught fish. Fires are lit with sticks on a barbecue in the back yard, ready to to cook a meal. And after a few glasses of beer, there may even be loud voices conveying messages.

Today, many messages come with photos attached; just press a button on your mobile and point at your subject. Everyone can be a photographer now. No one has to hold their head rigid in a metal clamp for several minutes, trying to keep completely still, while a man under a long black cloth handles the film plates. Yet sepia does have an air of nostalgia.
And now, new technology is arriving almost hourly, changing our lives in ways that, just a few years ago would have seemed unbelievable.

A robot packing our suitcases, then a driverless car taking us to the airport for a holiday on Mars are things we might well have to get used to accepting.



# The Edison Stock Ticker

Do you realize if it weren't for Edison
we'd be watching TV by candlelight?
Al Boliska

**The photograph on the cover shows Ticker Tape girls working in the Waldorf Astoria in 1918.**

The girls were employed to operate tickers and stock exchange boards. The Waldorf was the first to employ girls in its various departments, in order to release men for war work.

Ticker tape was the earliest digital electronic communications medium, transmitting stock price information over telegraph lines, in use between around 1870 and only ending in 1970. It consisted of a paper strip that ran through a machine called a stock ticker, which printed abbreviated company names as alphabetic symbols followed by numeric stock transaction price and volume information. The term "ticker" came from the sound made by the machine as it printed.
Paper ticker tape became obsolete in the 1960s, as television and computers were increasingly used to transmit financial information. The concept of the stock ticker lives on, however, in the scrolling electronic tickers seen on brokerage walls and on financial television networks.

**Photo from the**
**U.S. War Department, American Unofficial Collection of World War I Photographs, National Archives and Records Administration**

“When you have exhausted all possibilities, remember this - you haven't.”
― Thomas A. Edison

# Tareni Colliery, The Mine, The Miners and Their Communities

Clive Reed

**This is a new publication based on five years research and interviews with miners and families of miners.** A colleague loaned me an historical document five years ago that was for the sale of Tareni Colliery that had become bankrupt in 1928. The sale catalogue consisted of eleven pages of technical information on the equipment .
My experience of working in steelworks on blast furnaces and conveyor systems, on construction sites, in ship repairing yards in South Wales, on, and in steam boilers, as a welder, as a blacksmith, and finally managing a coal mining museum gave me the knowledge to understand the technicalities of the sale catalogue and its equipment.

Interviews with ex-miners taught me the methods of coal mining as practiced in the deep anthracite coalmines of the mid and upper Swansea Valley in the period 1920-50. Sadly, a number of the miners I interviewed have passed away and will not see their stories in print. One such man was Mr Jackie Miers who worked in several coalmines in the Swansea Valley and the Dulais Valley and who gave me invaluable information on deep mining practices.

The sale catalogue listed all the working and non-working districts of Tareni Colliery in 1928 and what equipment was in each of the districts. The Below-ground workings include the shafts, tunnels, roadways and underground working areas of stalls, the haulage equipment such as conveyors and engines, ventilation equipment, pumps and various, ancillary equipment.

The area underground from which the coal was mined or taken was referred to as the mineral holdings, but in the Swansea Valley, it was known as the "Take" – the place where coal was taken from. In 1928, the catalogue listed the underground mineral rights area at Tareni Colliery as 2,991 acres, two roods and fifteen perches with a further 233 acres held under various leases and agreements. The "Take" was not a rectangular or square block of land, but a portion of land that followed boundaries on the surface such as fields or estate property.

Even though colliery headframes and surface infrastructure might appear to be at some distance from one another on the surface, underground they often shared the same coal seams and worked alongside each other.
In c1900, The South Wales Primrose Coal Company, who were the owners of Tareni Colliery, was bounded by the Primrose Colliery to the south, the Gilwen Colliery to the west and the Cambrian Colliery to the north. The Primrose Colliery was the original or old Primrose Colliery of 1840.

At Tareni Colliery in 1928, mining was mostly carried out in the traditional way of pillar and stall working, the stall being where the miner cut the coal and the pillar the column of coal left in place to support the roof. John Henry Davies stated that in Welsh coalmines at that time the pillar and stall method was wasteful of coal. He said that only forty-percent of coal was worked and that the pillar was usually worked off later, but often it was crushed by the weight of the mountain above and was of no use as sale coal.

He recorded that the headings were three yards wide, the working stalls six yards wide and the pillars six yards wide. Once cut, the coal was taken from the stalls to the pit bottom by a system of conveyor belts and pit horses, depending on the nature of the roadways and the geological strata underground. In the steep roadways, conveyors and haulage engines were used to pull the trams of coal to the pit bottom.

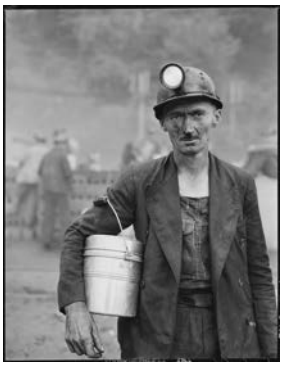
**There were places underground where it was too difficult for horses to work and mechanical power had to be used instead.** In those places, haulage engines, compressed air or electrically powered winches pulled or hauled the drams up very steep roadways underground or over long distances where it proved more convenient to use mechanical power.

The haulage engines were necessary in mines such as Tareni Colliery because of the steepness of the roadways in the distorted geology of the mountains in which the mines worked. In some sections of the mine the inclines were as severe as forty-five degrees in slope. No horses could possibly pull heavy loaded drams in those workings, with the combined weight of dram and coal being in excess of one and a half tons.

***Tareni Colliery considered itself to be a mechanical mine in 1928, with considerable numbers of haulage engines as the main mover of coal in the main roadways and headings underground, (author's emphasis).***

In 1928 there were sixteen haulage engines working underground at Tareni Colliery. Steam power was too dangerous to use underground because the heat emanating from the pipes carrying the steam was far too hot and could have posed a risk of explosion.

With air haulage engines sited at considerable distances from the shaft bottom, compressed air had to be piped to many locations, and this was achieved by means of steel pipes running for several miles to each individual engine.



With the use of compressed air underground, its over-riding principle was almost complete safety. There was very little to go wrong with compressed air haulage engines, other than the supply of air running out. The machines were robust and reliable and were ideal for long hours of work in heavy industry. With the electric haulers, the motor might fail to work, or the control mechanism might fail to operate. This would then entail changing either the whole motor or its control mechanism.

There were several haulage engine manufacturers in South Wales at the time Tareni Colliery was in production. Sheppard and Sons Limited of Bridgend in South Wales were one manufacturer and the Uskside Engineering and Rivet Company of Newport another, and who supplied Tareni Colliery with several of their machines. The latter named Company produced several different types of compressed air engines suitable for places underground with limited working space.
The long-type and the short-type of haulage engines were being manufactured for those locations, as were pumps for removing high volumes of water from the mine .Two shafts, the Tareni shaft or pit, and the Gleison shaft or pit, both working different coal seams at different depths, worked Tareni Colliery.

The Gleison pit had ceased working by 1928, though it was brought back into production at a later date, and only the Tareni pit was working at the time of the sale in 1928. Tareni pit worked under Mynydd Marchywel, the mountain on the eastern side of the River Tawe, whilst the Gleison Pit worked the much deep coal seams under Mynydd Alltygrug on the western side of the river. In the five working districts of Tareni pit in 1928, sixteen haulage engines were in use, both compressed air and electric powered.

Eleven pumps, again compressed air or electric powered, were in operation to keep the mine free of water and safe to work in. This equipment gives an indication of the amount of compressed air and electricity that would be required underground in the colliery each day and which had to be produced by the equipment and machinery on the surface by the colliery electricity generators and powerful compressors.

The haulage engines hauled trams great distances underground along roadways that were not illuminated. The only indication the miners had of the haulage system was the presence of the wire rope running on the ground, or the rollers supporting the rope that connected the haulage engines with the journey of drams.

**When the trams were being hauled toward the surface, the miners would hear the rumbling of the trams along the tramroads.** One of the commonest types of accidents on the haulage system, and one that caused death and injury quite frequently, was of "drams running wild". That was when the wire rope connecting a journey of trams to the winding engine snapped, or the coupling attachment became detached from the leading tram. The trams then ran back down the headings toward the working men.

It is difficult for anyone who has not worked underground to appreciate the full horror of what trams "running wild" means. There would be no warning of the rope snapping, just the loud noise of several trams attached to each other travelling down the roadways underground at increasing speed, the noise becoming louder as the trams gathered momentum. Often they hit the pit props supporting the roof and they would be shattered by the impact of several tons of trams and coal colliding with them.

The miners would be terrified, not knowing when the noise and trams would stop. Tragically, the runaway trams often crashed into men and horses in the pits. Such a tragedy happened on 13 April 1905 at the nearby Gurnos Colliery when young Thomas Jones, a collier boy aged fourteen years, was struck and killed by two empty drams that had "run wild".

In many mines water was sprayed in the tunnels underground in an attempt to control the coal dust in the atmosphere, especially after the introduction of mechanization and conveyor belts. Water was also used in coal extraction to break up the coal and make mining more efficient, especially in the long wall method.

The water infusion process introduced in the 1940s, whereby water was forced into the coal seam to bring the coalface down, was a huge improvement on the mechanical coal cutting method. Mr Jackie Myers (2013) said that in the water infusion method of working coal, holes were bored into the coalface five metres apart and six feet deep, and a four-foot long aluminium tube with a seal lock device with hose attached was inserted into the hole.

The tube was only slightly smaller in diameter than the hole and sealed at the end to prevent water escaping from the hole. High-pressure water was injected into the coal and found its way through the natural cracks and joints in the coal seam and washed the natural joint bonding material such as clay out of the strata, thus breaking down the coal. The miners would hear the coal "bouncing" as the water pressure forced its way through the joints and broke the coal. The coal was then ready for mining by the day shift. Waste was taken out of the mine on the night shift and deposited on the surface tips. Mr Myers described to me the long wall method of mining coal as used at Tareni Colliery in the 1940s. Two roadways extended into the coalface approximately 110 yards apart.

One roadway was the supply road for all materials going into the coalface, was eight-feet wide and six and a half feet high and was the route taken by horses with supplies for the colliers. The other was where the outbye conveyor belt ran and brought out the coal. It was known as the gate-end and was fourteen-feet wide and ten feet high. The long working area between the two roadways was split up into divisions known as the Stent, the working area of each collier, each five and half yards long and about four-feet high. The coal thickness was a nominal four feet with four inches of clod in the middle section.

Clod was the term used for any muck or clay present in the coal seam. That clod was excavated along with the coal but was thrown into the gob and helped to partly fill that space. Each day, the colliers extracted four and half feet of coal in front of them and the whole system moved forward that distance each day. As the coalface moved forward, the roof had to be supported by pit props spaced about six feet apart, more than seventy-five of them each day, cut and put up by the Timbermen.

Before the water infusion process was introduced, coal was cut with a mechanical saw, not cut by hand as in the pillar and stall working. A compressed-air powered saw cut a slice out of the bottom of the coalface, known as bottom slicing, to a depth of about four or five feet, then wooden wedges were driven into the top of the coalface where it abutted the rock strata above the coal. Wedges were usually sufficient to bring down the coalface. The dust thrown up by the mechanical coal cutters was horrendous, so it was no wonder so many colliers suffered with silicosis and pneumoconiosis. This is only a short extract from the publication *Tareni Colliery, The Mine, The Miners and Their Communities. An* invaluable source book for those studying coal mining and the social lives of coal miners and their families.

**Clive Reed**

## John Williams was born on 6th November 11840 in Gwynfe, Carmarthenshire.

He was the third son of David and Eleanor: David was a farmer and Congregationalist minister who was to die of typhoid fever at the age of forty in 1842. Eleanor had a strong belief in the value of education. John was educated locally before proceeding to the Normal School in Swansea in 1855: ten his mentor was Evan Davies. It was he who was to persuade John to pursue a scientific career: he was to proceed to the University of Glasgow in 1857 but Swansea beckoned and in July 1859 he returned to be apprenticed to W.H.Michael, surgeon and apothecary and Dr Ebenezer Davies.

The next move was to London: in his 21st year John entered University College Hospital studying under William Jenner who had attended Prince Albert before he died of typhoid fever: his expertise was close to John's heart.

John completed his medical studies having won the Silver medal for Chemistry and for Anatomy and Physiology and the Gold Medal for pathological Anatomy. He was awarded the degree of \doctor of medicine at the University of London in 1867.

He held resident posts at the Brompton Chest Hospital and the Great Ormond Street Hospital for Sick Children but returned to Swansea to 13 Craddock Street as a general practitioner.

In 1872 he returned to London to University College Hospital and in the same year married Mary Elizabeth Anne Hughes, only child of Richard Hughes J.P., of Ynystawe near Swansea, a respected industrialist. In 1883 John was appointed Obstetric physician and acquired a reputation as a skilful operator and a popular and trusted teacher. In 1886, Queen Victoria. On the recommendation of Sir William Jenner invited John to attend the birth of the child of her youngest daughter, Princess Beatrice of Battenburg. It was the beginning of a long and very agreeable association with the Royal family.

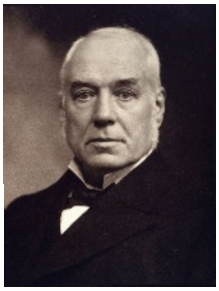
Princess Beatrice of Battenburg

In 1887 John was appointed first professor of Obstetric medicine and in 1893 Consulting Obstetric Physician at University Cottage Hospital. In 1894 he was created a Baronet: his coat of arms carried the motto 'Bydd gyfiawn, ac nac ofna' (Be just and fear not). His London home, in later years as a consultant- 63 Brook Street- had been previously occupied by Sir William Jenner. John was to remain there until he retired in 1903. Wales was never far from his mind; among other concerns he was to be a chief promoter of a movement to secure funds for the Welsh Hospital Unit sent to South Africa during the Boer War. He was one of the pioneers in the campaign to secure the eradicating of tuberculosis in Wales.

In London he was active in the revival of the society Cymmrodorion---and,

National Library Aberystwyth

above all, his early interest in collecting manuscripts, books, prints and art treasures (encouraged by his friendship with John Deffett Francis, artist and founder of the art gallery and art library in Swansea), merits particular mention.



John Williams came to regard his purchases as a foundation collection for a national library in Wales. Such a foundation was gaining momentum. By 1896 a Welsh Library Committee was convened in the University College which had opened in Aberystwyth in 1872. The endeavours of Sir John, by means of his personal contacts, his public pronouncement and appearances together with the willingness to contribute his vast treasure of collected items were to prove decisive, not only in establishing the national library but, also in securing its being located at Aberystwyth ( a location supported by Lloyd George).

**Dr Brinley Jones**

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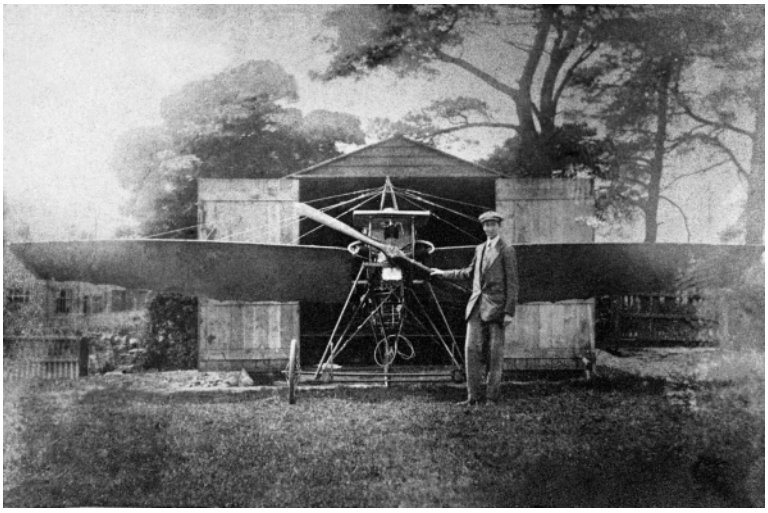
# Charles Horace Watkins, The Great Inventor

C**harles designed, and built a monoplane around 1906, taught himself to fly and flew the plane between 1907 and 1910.** Although no photographic evidence of this exists, the Charles Horace Watkins Monoplane Special, now better known as the 'Robin Goch' or 'Red Robin' has a strong claim to be the first aeroplane to fly in Wales.

Charles lived in Cardiff and his workshop can still be found a stone's throw from Cardiff University. It was here he built the plane making use of everyday parts that he converted for his needs. For instance, a kitchen chair for the pilot's seat; a brass domestic light switch on the dashboard; an egg timer as a navigation aid; a ball bearing in a cradle to tell if the plane was flying level and two weights dangling on string under the aircraft, one 20 feet long and one 10 feet long so he knew how far off the ground he was when landing!

In 2010 I interviewed two brothers, Michael and Sean Gomez, whose family lived next door to Mr Watkins. The brothers, who were in their 70s, remembered Charles fondly and told me many tales of what it was like in the 1950s for two young boys growing up next door to the 'great inventor'. Here is an extract of my conversation with them.

> *He always had time for us and he was always trying to do something new (he would have been in his late 60s at this time). We were fascinated going there, the projects he was working on seemed totally out of this world, and quite possibly one was! He showed us a mock-up of a flying saucer he'd built. When we asked him how it would fly he replied "It's top secret!" We couldn't tell if he meant it or whether he was working on a secret project as the saucer seemed to work on the same principle as a hovercraft with fans providing downward thrust and other fans along the sides for direction.*
>
> *He was very interested in project 'ZETA' – obtaining energy from water (Zero Energy Thermonuclear Reactor). He had diagrams all over his walls and said he was being consulted on this and also the Concorde project.*
>
> *He was always inventing something every time we met him. During the war he came up with an idea to deflect headlights of cars down to just in front of the vehicle. This was tested by South Wales Police on behalf of the MoD.*
>
> *One thing that stands out about his workshop is that he had about thirty cuckoo clocks and Westminster chiming clocks. He would faithfully wind them up every day and when it came to the hour they all went off at slightly different times! You had this cacophony of sound!*
>
> ***He lived with his sister who was profoundly deaf so he came up with an idea whereby if the doorbell was pushed a beam of light went all the way to the end of the hall where it reflected off various mirrors until it reached the kitchen so his sister could see it!***
>
> *He invented a machine from which he made most of his money. In those days spectacle frames were made of tortoiseshell and being relatively brittle, typically they would snap just behind the hinge. So, I remember in his middle room he had hundreds of cardboard boxes containing the arms of these glasses.*



*He'd invented some sort of ultra-sound machine. He'd put the two arms of the specs into this tiny machine and he'd bring the nozzle down on it. The machine had lots of coils of wires and all sorts of strange things and it hummed and buzzed. And 'hey presto' when it came out you couldn't see where the join was – it was seamless. Of course ultrasonic welding is quite common now for welding plastics.*

*He had spectacles from opticians from all over the country and he made a tremendous amount of money from it. I remember seeing a pile of white five pound notes on his table just tied up with string. It seemed to me as a boy quite a lot, but in reality was probably only a couple of thousand (pounds) still a lot of money then though. He didn't believe in banks! I don't think he had a bank account, he kept all his money at home.*

*He also had a radio, that he built himself, which could receive American radio stations. This was quite something at that time. He took it apart one day and let me have a look at it and it had about fifteen valves!*
*He didn't show the monoplane to anyone, although we nagged constantly to see it. Then one day he told us if we came round on Saturday we could see it. The amazing thing was that this man had a plane in his garage when most people didn't have cars!*

*He had the prop hanging up on the wall and we asked him where he got it from because at that time you couldn't just get one from anywhere? He told us he'd carved it himself out of a piece of sapele. When we asked how he knew the shape to make it he replied* ***"Well one just knows these things you see"***
*We questioned him about how he learned to fly and he said "I just taught myself. I wasn't worried about getting it up, but I was worried about getting it back down!" From the conversations that I had with him, I developed the opinion that the plane really did fly. If it had not I think Mr Watkins would have been more evasive with his answers and he certainly wasn't evasive in any way.*
*When we asked him what he was going to do with it he said that he'd like to leave it to the nation.*

*"I had an American sniffing around, said he wanted to buy it. Offered me several hundred pounds for it. I told him to bugger off!"*

For me Charles represents a generation filled with explorers, scientists and inventors who were making new discoveries on a daily basis. They were at the birth of an age, of which we are still a part, when people have seen massive technological changes in their lives. I do wonder sometimes where we would be without people like Charles Horace Watkins, the great inventor!

**Ian Smith**

# The Guillotine: Enlightenment Technology Gone Wrong

**Stephanie Brown**

**On 1 December 1789, Dr Joseph-Ignace Guillotin recommended what we now know as 'the guillotine' for use in state executions.** The intentions behind this invention were humane; it was to be a product of the Enlightenment and an example modern technology used to improve ancient and horrific methods of execution. Unfortunately, this article will show that the reality was far from that.

The Guillotine was by no means an original device; decapitation machines were known across Europe before the Enlightenment. Dr Guillotin proposed only slight amendments to machines used in medieval Halifax, Renaissance Italy and early modern Germany. Dr. Louis designed the machine, but it was very difficult to find people to build it, some of those who did come forward wanted to remain anonymous.

The machine was finally built in the Spring of 1792 by Tobias Schmidt, a piano-maker. It took him less than a week and cost 960 livres. Its first victim was to be Nicolas Jacques Pelletier, who had been sitting in prison since January 1791. He was executed on 25 April 1792 for stealing 800 livres, less than the cost of the machine that executed him. After this, 82 machines were commissioned, one for each *department*.

Shuddering at its reality, Dr Guillotin endeavoured to dissociate himself from the machine. He was horrified to learn that it had taken his name and he even went so far as to prescribe his friends suicide tablets, in case they were ever unfortunate enough to be a victim of the machine. The Guillotine became known as 'the Bastard daughter of the Enlightenment.'

During the Terror, the Guillotine completed its transformation from a well-intentioned proposal, into a tool for political violence and mass murder. Some historians argue that the Terror's events should not shade us from the guillotine's founding principles. However, other historians have questioned these principles stating that the guillotine was created 'not to punish less but to punish better.'

Far from a modern, enlightened method of execution the guillotine actually created horrific scenes. The Revolutionaries wanted to draw a crowd, so executions by guillotine became reminiscent of medieval-style execution and a source of entertainment. People bought souvenirs, such as the victim's hair or clothing, even handkerchiefs dipped in the blood. It became customary lift up the dripping head to show it to the people. Additionally, as the guillotine was not placed outside the prison, condemned prisoners were subjected to a slow ride of up to two hours in a tumbrel with crowds heckling and throwing things at them.

Furthermore, the rational men behind this new, humane technology failed to anticipate of the rivers of blood produced by the guillotine. People complained about blood flowing in the streets and the noxious stench. Plus, executioners had to replace their clothes due to being covered in blood. These scenes were unprecedented, even with some of the cruel execution methods of the *ancien regime.*

The invention of the guillotine was supposed to create an instantaneous and painless death, yet, it has been argued that it did the exact opposite. It was widely reported that heads appeared to the alive after execution, the most famous example was the execution of Charlotte Corday, the assassin of the revolutionary Jean-Paul Marat. There was scientific agreement that bodies and heads moved after execution and the brain could receive sensations from amputated parts. Pierre-Jean-Georges Cabanis, a supporter of the guillotine, admitted that death was not instantaneous after experiments on animals.

If you were, even to some extent alive after the execution then it must have been a painful experience which is far removed from the intention that this technology would enable a humane execution. A contemporary German physician, Samuel Thomas von Sömmerring, stated that hanging was a much less painful death as it induces a state of sleep, whereas the blade of the guillotine crushed the vertebrae with its weight rather than cutting. Other doctors agreed that hanging, asphyxiation or poisoning were more favourable deaths, including Pierre Sue who believed that both the body and the head suffered after separation.
The guillotine has been seen as an enlightened invention as it elevated the poor to the blade; previously only nobles had the axe. However, part of the reason this machine was needed was because it was believed that the poor did not have the decorum for execution by blade. It was said 'the riffraff who were to be decapitated might not show the seemly composure expected of a gentleman.' The executioner, Sanson, described the lower classes moving and said that it was necessary to strap them to a board.

Finally, the main reason that the guillotine failed as a modern and humane piece of technology is that is facilitated mass executions. It was described as a 'relentless mechanical decapitator which made the streets of Paris run with blood.' The executioner called for a new technology as the old methods would have been unable to cope with the mass executions of the Terror. There is an example of 32 people being guillotined in 25 minutes, with one day seeing 54 executions. During the Great Terror 1,376 people guillotined within six weeks, it simply would not have been possible to hang that many people.

The guillotine started as a piece of technology designed for humane and enlightened execution, though, it became a symbol of terror and a means of mass, horrific execution and a tool of political violence. With technological advancement, there is reasonability and even the best intentioned designs can cause suffering.

**Stephanie Brown**

# How Digital Imaging Technology Can Help Historians

## John Smith

As everyone knows, the advent and continual development of digital cameras and image processing technology has completely changed photography. Once a hobby split between elitist amateurs and occasional holiday snappers it's now infinitely more democratic. A large majority of people carry and use smartphones every day to create brilliant pictures, and many, many (many) more photographs are now taken each year than throughout the history of film photography.

How though, does this technology help historians? These are just some ways in which I believe it can enhance the meaning of any message you are trying to convey through pictures, aiding understanding and interpretation. As a relatively new convert from film photography I am still childishly delighted by two particular things; being able to take lots more than 24 or 36 photographs without reloading and, even better, changing ISO on the go, making it easy to capture the inside of dark buildings without a tripod, flash, external lighting, or all three.

Excellent pictures, free from camera noise, can confidently be taken unobtrusively, inside, in near gloom and without sunlight streaming in through the windows (assuming any windows). You can capture just the scene you want (providing you follow any regulations on photography) without relying on postcards that may not show exactly what you, as a historian intended to illustrate.

My father sparked my interest in photography and in black and white printing. Like many enthusiasts our bathroom became his darkroom (luckily we had a separate loo), mostly on winter evenings when least light poked through the blackout curtains. A board went over the bath, the enlarger emerged from its dust sheet in the spare bedroom, trays and chemicals from their places in various cupboards. (And all this after a kitchen sink development; my mum was the epitome of patience).

The safelight went on and off we went into a world of darkness, smells and liquids of dubious safety, knowing everything had to be away before bedtime. It's not like that today.


Mobiles edit photos wonderfully, using a myriad of competing apps, and the most complex picture can be processed, in perfect colour with practice, in a sunny room, with endless tea and biscuits to hand and no danger of drinking developer. Identical images can be reprinted until your paper runs out and breaks can be taken with no fear of fogging film or paper; though nothing quite recreates the thrill of seeing your photo loom from the developer. And ink costs a small fortune.

Having taken your pictures, and not needing to be a competent Do it Yourselfer in order to process them, digital technology has also transformed how they can be presented. As copies can be made in seconds it is perfectly possible, and straightforward, to ensure historic accuracy whilst allowing greater, more rapid audience understanding.

It is for example simple to correct vertical (and horizontal) perspective after the event. Without expensive lenses, upright structures can now look truly vertical. As well as increasing impact, it may simply have been impossible to take a corrected picture in the first place, due to viewpoint, access issues or other difficulties.

Beyond simple perspective the walls of buildings too close to your nose can also be straightened; ideal for when medieval town planners lacked the foresight to allow a simple picture of a row of Tudor houses to be accurately captured 500 years later.

Helpful (appropriately sized) pointers and notes can be quickly added, leaving no-one in any doubt what they are looking at; is that the transept or the apse?

Making areas of an image deliberately darker or lighter focuses attention and achieves the same objective, and since it is always a copy, the integrity of the original is never compromised.

All this applies equally to scanned slides, negatives or prints. A 40 year old slide of a Gower church can have its perspective corrected and attention concentrated on the relevant parts just as easily as a shiny new digital photo.

With only slightly greater complexity, current pictures of historical sites can be superimposed upon drawings, paintings or older photographs of the same location, highlighting the changes wrought by time. *The Guardian* newspaper takes this several steps further with its brilliant occasional series of "Then and Now" historical images, but the basic effect can be quite simply achieved.

Digital image processing now allows almost any picture to be returned to near to its former glory. Colours can be re-saturated, marks erased and exposure corrected; amongst many other alterations.

Be it an irreplaceable print that's faded in its frame, or fallen apart through age; a unique negative that through poor processing was previously rendered unusable, or bashed and ageing slides; all can now look as close as possible to the day they were created, and the originals safely stored away.

It is ever more important therefore to make sure the many, many (many) more photographs taken today are labelled in a way that lets them be easily found again.

If it's just you and your computer then something simple will be fine, providing you can find just the picture you are looking for in seconds, but if you collate a society database or images taken by different people, then everyone must understand what you are doing so they can send you suitably tagged pictures (even if you add more detail later) and someone else can retrieve a photograph if you are unavailable.

With storage inevitably, goes back-up and future accessibility. The theory that nothing is truly backed up unless there are three copies, one of which is in a different location is a sound one. Copies of all your important images really should be kept elsewhere and updated regularly. Once your pictures are looking their best, the last thing you want is to undo all your hard work, especially as so many socially important photos are lost forever through file corruption, long forgotten formats or over excessive deletion.

**John Smith**

# The Reopening of the Glynn Vivian Art Gallery - October 2016

In a recent study, *The People's Galleries. Municipal Galleries 1800-1914* (Yale University Press, 1914), the distinguished art historian and director of the Dulwich Gallery, Giles Waterfield, drew attention to the importance of 'provincial' galleries and the enlightened philanthropy that lay behind them for developments in education and the broader cultural 'climate' in Britain. Currently (until February 2017), the Watts Gallery in Surrey has dedicated an exhibition to the importance of private collections in roughly the same period. The event discussed in this contribution, shows how Swansea fits into this picture.

Richard Glynn Vivian had little interest in the industries that made his family wealthy and prominent amongst a newly rich and influential 'aristocracy' that dominated Swansea and its region in the nineteenth and earlier twentieth centuries. Richard, a Cambridge graduate, was an insatiable traveller and collector of artistic works and craft forms. Although his travels took him literarily round the world, most of his collection came from mainland Europe where political and social changes, and the deconsecration of religious buildings supplied an international 'art market' eagerly fuelled by ambitious and wealthy collectors from America, Britain and elsewhere.

As a collector Richard Glynn Vivian seems to have had no narrow aesthetic 'agenda' and the impression given by what is known of his collection is one of a rather 'magpie' nature designed to furnish the rooms of his home at Sketty Hall (purchased in 1898), impress visitors and remind himself of his travels. However certain 'themes' do emerge. He had a definite enthusiasm for porcelain doubtlessly encouraged by the contribution made in this field by Swansea and South Wales. He had an interest in miniatures. He also collected works in marble from Italy to embellish Sketty Hall and its 'Italianate' gardens. However, despite advancing age, ill-health and failing sight, Richard fitted into the philanthropic and enlightened ethos discussed by Waterfield in his 2014 study. He founded an art gallery in Swansea - The Glynn Vivian Art Gallery - now re-opened after an extensive, upgrade by the architects Andrew Nixon and Powell Dobson.. The original was built (1909-11) to a design by the Swansea born and largely Swansea based architect and teacher Glendinning Moxham (1865-1945); John Newman in *The Buildings of Wales* (Yale University Press, 2004) describes it as a 'masterpiece' and 'monumental' with a 'full-blooded' interior despite its relatively small size. A closer analysis reveals a somewhat eclectic style in the building of which may have reflected Richard's own varied interests. The magnificent atrium with its whitewashed walls, gray, *pietra serena* stonework and two miniaturized versions of Michelangelo's statues for the Medici chapel in Florence surely reflected Richard's fond memories of his Italian travels. Whatever, the gallery contributed to creating one of Swansea's cultural 'hubs', facing the famous Swansea College of Art founded in 1853, a place where Moxham later taught.

Richard Glynn Vivian laid the foundation stone in 1909, but suffering poor health did not see its completion. Unfortunately, following his death in 1910, much of the collection at Sketty Hall was lost through a combination of neglect, auction sales, natural dispersal and, to be blunt, theft. For example, many of the marble features which once decorated the garden at Sketty Hall and recorded in photographs in Richard's own memoir *Out of Darkness Light* (privately printed in London in 1906) have vanished. Neither, so it seems, are they recorded as having been sold, given away or re-distributed amongst other Vivian properties. However, items from his collection form the core of the gallery that bears his name.

It was not the ideal time to establish an art gallery, Two world wars and periods of severe economic recession contributed to its subsequent relative neglect. No full on-going catalogue or inventory was ever produced. However, positive developments began in the 1970s with an extensive extension to the building's exhibition space designed by the City Architects Department, described by Newman as 'a windowless concrete box (hovering) over a recessed, glazed ground storey'. 'Visually arresting in its own right, this nevertheless does nothing to impair Moxham's façade'.

This 'box' has been considerably enhanced in the upgrade, as has access to the Gallery as a whole. A lecture area with excellent acoustics has been created within the older structure and improved library facilities have been added. Behind the Gallery, state of the art storage is now provided for the permanent collections, revolving shelving replacing cardboard boxes for the important Welsh ceramics! Equally important, studios are now available for the study and conservation of paintings and works on paper, and office space for the enlarged staff needed to make the most of an important and - hopefully - growing collection in terms of research, education, visiting exhibitions (as in the case of the current exhibition of Leonardo drawings from the royal collection) and 'outreach' programmes. Whilst the gallery was closed, a Glynn Vivian Art space 'in exile' was established in the YMCA building near the centre of Swansea and this experience has led to the growing involvement of the public in the aims of the Gallery, an involvement reflected in the very public festivities surrounding the Gallery's re-opening in October.

At the official opening reception held in October, acknowledgement was given to the bodies that supported the work including the Welsh government, the Welsh Arts Council, the Lottery Fund, the City and County of Swansea, the European Community (often supportive of 'smaller nations'). Enthusiastic recognition was also given to the importance of the collection, and to the Gallery's ability to exhibit works from other leading galleries not only in artistic terms but for the community's sense of worth and well-being.

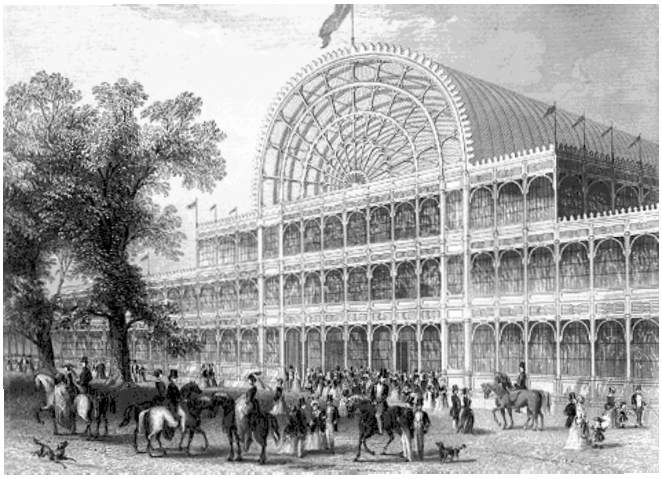
To maintain and develop such aims will require constant effort, and here tribute should be paid and support offered to the Curator, Jenni Spencer Davies and her team, as well as to key, loyal, champions of the gallery as represented by the Friends.. There could well be a role here for the Swansea and South West Wales branch of the Historical Association and other interested parties in terms of conferences, guest lectures, research and exhibitions. However, were one of Swansea's universities to have the academic sense and foresight to introduce a degree in the History of Art, that would help.

## John Law

# The Great Exhibition 1851

**The Great Exhibition (of the Works of Industry of All Nations)** often referred to as the Crystal Palace Exhibition was an international exhibition that took place in Hyde Park, London in 1851. It was the first in a series of World's Fairs exhibiting cultural, technical and industrial designs that became popular in the 19th century.
That it came into being at all was partly thanks to the dream of a civil servant called Henry Cole - the same Henry Cole who invented the Christmas card (supposedly as a means of encouraging people to use the new penny post). In 1849 Cole visited the Paris Exhibition and was enthused enough to encourage something similar but far grander in England. He helped to persuade Prince Albert, the consort of Queen Victoria to lend support for the project.
In an open competition 245 designs for the exhibition hall were submitted - all were rejected on the grounds of impracticality of design or construction costs. Another committee was convened with Isambard Kingdom Brunel included in the hope that his engineering expertise would prove useful – the result was even more impossible designs being submitted. Eventually it was a gardener - the head gardener of Chatsworth House, Joseph Paxton, a genius in his own right who submitted the final winning design – one he had based on his own glass and metal greenhouses at Chatsworth. That it could be built within time and budget lay in the fact that it needed no bricks or foundations but could just be bolted together. The proof of the genius of the design was that it was conceived, approved and constructed in less than a year and amazingly *under* budget. The finished building was precisely 1851 feet long (a pleasing detail to commemorate the year of its construction) 410 feet across and 110 feet high. While it existed it was the largest enclosed building in the world that captured the hearts and imagination of the visiting public. Douglas Jerrold, a columnist for Punch called it- on account of all the glass and light *The Crystal Palace* and the name stuck.

It was officially opened on May 1st by Queen Victoria who called the opening day 'the greatest day in our history'. From the start the public loved it and flocked there from all over the country. **A Mary Callinack, aged 86 walked more than 250 miles from Cornwall to see what all the fuss was about.** The historian Rawdon Brown who had vowed he would never leave Venice where he had settled in 1833 found all the publicity too enticing to stay away and breaking his promise to himself he returned to visit the exhibition. Sadly not all the visiting public was so enamored. The designer William Morris found the crowds and tumult too much to take and was promptly physically sick in nearby bushes.
Apart from marveling at the 100,000 exhibits from all over the world the public were amazed and delighted by the new flushing toilets or 'retiring rooms' that were available as public conveniences at the time were neither common nor pleasant.
In retrospect one of the most surprising aspects was that apart from being a popular phenomenal success at the time the event also created a huge cash profit. This was used to found both the Victoria & Albert and Science Museum and established an Education Foundation that is still functioning today.



**Kenza Eastwood**

# Season’s Greetings

An original painting by John Dyas

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The Editor would like to thank all the people who have contributed to *Chronicle* over the past year.

Thanks also to Adrian, the printer, who always finds time for us.

To the Waterfront Museum for their continual support,

and to David and Margaret Walker who have donated more books from their collection to the HA, Swansea Branch for sale on their stand at the book Fair or to members.

# HA Swansea Branch Programme 2017

**Talks on Saturdays at 11.00, National Waterfront Museum, Ocean Room**

**21st January 2017**

**Dr Leighton James**

**The Sid Kidwell memorial lecture**

## Nelson: his Life and Legacy


**18th February 2017**

**Byron Gage**

**How? The Story of NCY 627**

**18th March**

**Professor Janet Burton**

**Monastic Wales**

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| Individual membership: | £10 |
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**Lisa Summers**

**12 Austin Avenue**

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