HISTELEC NEWS

NEWSLETTER OF THE SOUTH WESTERN ELECTRICITY HISTORICAL SOCIETY

No. 33 **AUGUST 2006**

SUMMER SATURATION?
I wished you plenty of sunshine in the last newsletter. The abundance has been breathtaking, so I hope that you have all coped satisfactorily. ***Peter Lamb***

EXCITING NEWS FROM THE GOVERNMENT?
So we could see the building of a new nuclear station or stations and the Severn Barrage Scheme. Somebody has actually realised that the current renewable energy projects of wind and wave power will not be enough to provide sufficient capacity for the future ESI.

The Government's long awaited Energy Review has been a dramatic change from that of 2003. The main findings are an emphasis on renewable technology, the need for energy efficiency and the endorsement of a new generation of nuclear power stations. The UK will see 20 gigawatts of power capacity taken off the system by 2016, which includes old coal fired stations and all the Magnox nuclear stations. To fill this gap, building needs to start now but the Government cannot promote the action, so will the Review encourage generating companies to invest, the papers say?

What are your views – send them to the editor for the next issue in December?

INDUSTRIAL ARCHAEOLOGY
Industrial archaeology was started in Britain 50 years ago, but now it is being expanded into Holland and Germany. It is proposed to link significant sites in Britain and on the Continent with an Industrial Heritage Route (ERIH). The Route will start at Ironbridge and go through to the Ruhr, the powerhouse of the North Rhine and Westphalia in Germany.

BATEMAN'S
In the last issue we mentioned the visit by Marcus Palmen to Bateman's, the home of Rudyard Kipling, where Marcus was intrigued to find a small hydro-electric scheme. Member Roger Christy writes that his Grandfather Frank Christy was involved in setting up the scheme with Col. Crompton. That's not surprising since both Christy Brothers and Cromptons were based at Chelmsford and had a close working relationship with many schemes.

SOUTH WEST TO HAVE A NEW POWER STATION
An gasl-fired power station has been given the go-ahead for construction at Langage in Devon. Planning permission had previously been obtained and it will be built by Centrica. The French group, Alsthom has signed a fixed-price contract to build the 885MW combined cycle gas turbine station. It will be the first power station to be built in the UK for five years. It is expected to be completed by 2008/09.

ARCHIVAL RESEARCH
Anyone interested in writing up the story of the Torquay Corporation Electricity Department? We have just found that some of the Minute Books for the Torquay Undertaking have been located at the Devon Records Office in Exeter, but strangely the only years they have in their possession are from 1921 – 1936. Where are the early ones and those from 1936 to nationalisation? The story of the Torquay Undertaking is fascinating due to the lack of suitable sites for generating stations in the Torquay conurbation. The original generating station was situated at Beacon Quay within Victorian Baths complex.

We have an offer of a researcher for Weston-super-Mare undertaking, following a talk given by Peter Lamb to Weston U3A.

BRISTOL INDUSTRIAL MUSEUM
The BIM is to be closed in October and the building redeveloped as the "Museum of Bristol". The City Council have won a Lottery Grant of £10.25M, which is a large share of the total project cost of £18.6M. The redevelopment set problems for the Curator, Andy King, since the BIM holds a vast reserve collection of items donated in the past but never put on display. These have all to be offered to other museums or disposed of. SWEHS sent a posse of committee members to view the many electrical artefacts and have agreed to take about a dozen items, most of which are instruments from the old Merchants Venturers' College.

CAIRNS ROAD MUSEUM
You may be pleased to hear that our Museum has been given a complete upgrade with a new shelf added and lighting. Also John Heath has completed the Cable/Jointing Display, which looks splendid including some of the latest cables used by WPD.

INUAGURATION OF ENGINEERS' WALK

The Retired Professional Engineers' Club (Bristol) have created an Engineers' Walk in conjunction with the @Bristol organisation, to celebrate the achievements of some of the great engineers and scientists with local connections. The Walk runs from the Centre at the head of St Augustine's Reach past the Watershed to the Imax Theatre and on to Explore@Bristol the hands on science museum.

In her inauguration speech, Miss Julia Elton of Clevedon Court, who has long been a champion of engineers and engineering, referred to the crucial importance of St Augustine's Reach in the commercial development of Bristol. Members were most grateful to Julia who had travelled to London very early in the morning on business, returned to Bristol to perform the inauguration, and immediately afterwards went back to London.

The first two commemorative plaques have been installed on the Imax Theatre. Miss Elton outlined William Patterson's rise from humble origins to become one of the most important ship builders of all time. His most famous ships were the Great Western and the Great Britain (for Brunel) and the Demerara. Mrs. Michelle Miles the great great great grand daughter of William Patterson was present. Mr Julian Russell described the career of his father Sir Archibald Russell at the Bristol Aeroplane Company from biplanes to Concorde. Julian recalled an occasion when a young Archibald was sent up in an early monoplane and observed most alarming twisting of the wings. Perhaps it is not surprising that Sir Archibald became a master of wing design and that to this day the wings of Airbuses are designed in Bristol.

The end point of the walk is the existing sculpture 'Small Worlds' which stands outside of Explore@Bristol and commemorates the achievements of the physicist Paul Dirac. M. Goery Delacote, Chief executive of @Bristol entertained members with anecdotes about the collaboration between Dirac and the famous Oppenheimer brothers. Afternoon tea was taken on the splendid Roof Terrace of the Imax Theatre.and Mr Simon Thomas the sculptor of 'Small Worlds' gave members some insight into the construction of the piece.

The Retired Professional Engineers' Club hope that Engineers' Walk will encourage the public to take pride in Bristol's rich engineering heritage and to realise the continuing importance of engineers in the development of our society. More plaques will be added to the trail in the next few years including one to celebrate the achievements of Sylvanus Thompson (Electrical Engineer, Educator and Scientist). SWEHS Secretary Peter Lamb has already written a biography of Thompson, which will be installed on the website www.engineerswalk.co.uk. ***John Coneybeare***

FLEET AIR ARM MUSEUM VISIT

Members took the day out on Thursday 18 May to visit "Europe's No.1 Naval Aviation Museum". A weekday was chosen as we were advised that the Museum would be a lot less crowded than at the weekend with the absence of schoolchildren.

Due to a cancelled morning talk, we were forced to have an early lunch in the Museum cafe, appropriately named the "Swordfish Restaurant", before going into the Museum proper. After lunch we looked at the static displays and of course, the shop. "Air fix" models of many aircraft and the carriers that support them. One corner of the first hall was devoted to the Falklands war and the role of the FAA.

We were then met by our guides for the afternoon, who split us into four groups for a conducted tour of the site. All four guides were retired members of the FAA, the guide for my group had worked as an engineering officer of the Arm and hence was in a good position to answer our technical questions. The site is divided into four halls displaying various aspects of aircraft evolution and their use in the context of naval warfare. The first hall had exhibits from World War one and the inter-war years.

The second hall is devoted to aircraft - and engines - from the Second World War and subsequent events. A feature of this group of exhibits was the increasing ingenuity in getting the aircraft's wings folded to put it away under the flight deck - and at the same time keeping the under-carriage short enough to withstand the rigours of deck landings but tall enough to stop the propeller from hitting the deck.

The third hall was perhaps the major attraction. This has been built to simulate the flight deck of a carrier - to get onto the flight deck you are treated to a short "flight" in a helicopter, complete with noise and vibration. Then comes an audio-visual presentation of aircraft landing and taking off from the deck of a carrier. To say that it was dramatic would be an understatement. I had seen it before when John Gale & I were taken on a quick tour as a prospective venue - but it still had me ducking for safety - and the noise level! This was followed by a tour of the most realistic reconstruction of the "Island" - the control tower of an aircraft carrier.- to show the various operational aspects of running an aircraft carrier. To cap that you leave the relative peace of the "control room" and go out onto another part of the flight deck for even more dramatic - audio visual show. If you didn't duck for the first one - you did this time.

The final hall they call the "Leading Edge Exhibition" and is devoted to the development of modern aircraft like the Sea Harrier, including the second (002) pre production Concord(e). Not really much to do with Naval aircraft - but a draw for the public I suspect. I was struck how claustrophobic this plane was - particularly at the sharp end were the flight crew lived.

The atmosphere at the site was enhanced by being close to the RNAS operational base, where helicopter operation was in full swing. It was a bright day with a strong wind bringing the smell of kerosene across to the museum site. Somehow it made it all seem real. A big thank you is due to the guides and thanks too to John Gale for organising the day. ***Roger Hughes***

DEVONPORT DOCKYARD TRIP

Some 30 members and friends gathered at the Plymouth Argyle Park and Ride car park at Plymouth on 14th June for an excellent outing to Devonport Dockyard organised by Ted Luscombe. Those of us who followed the instructions had no problem in finding the car park; others had an interesting trip around Plymouth! We boarded our coach and headed for the South Yard where we had coffee & biscuits before starting the tour in earnest.

A lot of history had to be absorbed from our guides during the day. At the end of the 17th century the need for a naval dockyard in the West of England was recognised and a fledgling dockyard was established at Plymouth. An Act of Parliament enabled 35 acres of land to be obtained and on 18th January 1692 the yard's first Master Shipwright, Elias Waffe, was engaged. Later that year work began on the first dry dock and by 1698 the first phase of Plymouth Dock was completed. Development then continued up to the 20th century. Although originally called Plymouth Dockyard, King George 3rd was so impressed, when he visited the dockyard he called it "My Devon Port" and the name stuck. Ships would be often taken across the River Tamar to be coated in tar and the location was known as Tarpoint – later to become Torpoint.

Our first stop was to go into one of the early "rope walk" buildings. Sailing ships used about 29 miles of rope in the riggings and these had to be changed about every two years. Rope making was therefore an important part of the Dockyard work. Men would walk back and forth in the 800ft buildings making up the strands of rope from hemp fibres until the required size of rope had been made. A coloured strand would be put in so that the place of manufacture could be identified – red in the case of Plymouth. We then visited a display of ships figureheads, much larger than we had imagined and then had a demonstration of the execution cell and the hangman's noose!

Following a visit to the Naval Base Museum we had an excellent buffet lunch before our coach took us to the North Yard. A stop at the Central Intake 33kV substation enabled us to see the frequency changers. Ships operate on 60hz and so when in port and connected to the mains supply the frequency has to be changed from the British standard of 50hz.

The North Yard is now the operational part of the Dockyard and Naval Base, so for security reasons we were confined to our coach as we toured around. In 1987 the dockyard was sold by the MOD to commercial management resulting in the creation of Devonport Royal Dockyard Ltd, who trade as Devonport Management Ltd – DML. With the decline in shipbuilding and the size of the Navy, the work of DML is primarily concerned with refits, particularly the Vanguard Class submarines. However, some private work is carried out on the construction of private yachts and cruisers. They work out at about £1,000,000 a metre to build, so even if you win the lottery, you would only get a luxury rowing boat!

Our visit ended with afternoon tea before being transported back to our cars for our journeys home.

David Hutton

EDF ENERGY -
GREEN ENERGY FUND

In Histelec News No. 32 the question was posed ***'Did you know EDF Energy has a Green Energy Fund?'*** My answer is a resounding ***YES!***

For the last three years I have been involved in setting up a small hydro-electric scheme for a charity (The Peredur Trust) on the eastern side of Bodmin Moor. This has been possible thanks to a very generous grant of £30,000 awarded by the EDF Energy Green Energy Fund in 2004. I first heard about this fund from a chance meeting at Truro Railway Station with an old colleague, Treve Geraty, who was waiting to catch a London train. As one of the United Kingdom's largest energy companies EDF Energy care about the environment they operate in, and one of the ways that they do this is by funding projects such as ours which show case renewable energy technology.

As it was explained to me, the Green Energy Fund is generated by voluntary contributions from EDF Energy customers paying a green tariff matched by EDF Energy pound for pound. Many thousands of customers have opted into this scheme and each pay around £15 per year towards renewable energy schemes.

Our hydro-electric scheme uses an old mill leat off the River Inny to drive a twin cell, variable admission, crossflow water turbine made by Valley Engineering, St Blazey, Cornwall. This in turn belt drives a 10kW, 8 pole, 3 phase, 50 cycles per second induction generator which is Grid connected. The scheme is controlled and protected by an electronic management system supplied by G P Electronics of Bovey Tracey, Devon. Excess energy at any time is to be exported to the Grid for which EDF Energy will pay 5p a unit.

If any one would like to see the scheme, which is located at St Clether some ten miles west of Launceston and/or would like further information about the Green Energy Fund please contact me, Roger Christy, on 01872 862734. No email address, no web site. I live in the good old pre-PC world!

Incidentally, EDF Energy has awarded £2.1 million to renewable energy projects since the fund was launched in 2001. More than 120 projects have received a boost of up to £30,000. The Fund encourages the generation of energy produced from sun, wind and water and from other renewable sources providing a cleaner alternative to fossil fuels such as coal, oil and gas. It also encourages innovative ways of reducing the greenhouse gases responsible for global warming. The grant scheme is open to charitable, educational and other non-profit community organisations and we have certainly been one of those to benefit from this. ***Roger Christy***

HONG KONG KETTLE MUSEUM

You may have noticed that our web site has a link to a Kettle Museum in Hong Kong . This arises out of a contact made via the Web Site by a Mr Neil Gould. He is involved with a factory that makes Kettles and Toasters in China proper, but has its offices in Hong Kong. As a sideline he also runs a museum for Electric Kettles, in which there is an outstanding collection of kettles of all ages and countries with reasonable historic comments. For anyone with an interest in electric kettles this site is a must and the collection must be unique in its scope. A great deal is on display on the multi-page website with the URL www.kettlemuseum.net

It puts Glenys's collection of Coffee Percolators (24 in all) quite in the shade. ***Marcus Palmen***

MEMBERS NEWS

Roger Hughes – The secretary visited Roger recently and over a drink on the back patio noticed an unusual feature in his back garden. Roger said that's a "gruffy hole". ***Explanation in the next issue.***

Ian Crichton – Ian and his wife Margaret opened their garden to the public this Summer for the National Gardens Week – must be very impressive and lots of hard work.

Brian Grimshaw – Brian has been very ill with a rare desease, Wegeners Granulmatosis. The virus attacks all vital organs, which left Brian unable to walk. He has recovered well over a long period, but is at a loss to understand how he caught it.

David Hutton – David has had a hernia operation and is back in the driving seat after some painful moments.

David Lock – David has had a stroke, leaving him with a loss of mobility of his left arm and leg, but making progress.

Colin Hill – Colin and his wife Norah are having to move due to Norah's poor health, being unable to walk very far.

We wish all three gentlemen and Norah, an improvement in their health situation.

DAN BENTHAM

Member Dan Bentham has died aged 94. He was very keen and supportive of the Society and its objectives.

Dan's father was Chief Electrical Engineer with the Country Electrical Group of Companies, which may have been the encouragement for him to join the Supply Industry. Dan studied for his articles and became a solicitor within his father's company, interrupted by his army service during the War. Upon nationalisation he put in for the post of SWEB's Secretary and Solicitor and was disappointed to be appointed Deputy Secretary, However he did reach that noble pinnacle at a later date.

BRISTOL RECORDS OFFICE

Bristol Records Office are putting together an exhibition on "Bristol At Work" and have been looking for photographs. We have been able to supply 14 photographs, which have been copied from our Archive.

PUMPED STORAGE – NOTHING NEW

I recently visited Kingswood Heritage Museum, near Bristol. This fascinating museum is built in an 18th century brass mill, at one time the biggest in Europe. William Champion, the Quaker industrialist, dammed the nearby brook to provide power for the mill. The mill used local coal to process zinc ore from the Mendips, producing brass sheets, implements and wire for pin making. What particularly caught my eye was an article from the Bath Chronicle of July 21st, 1814:

"We visited Mr Champion's copper works about three miles from Bristol. Here the whole process of the copper and brass manufactures is exhibited, from the smelting of the ore, to the forming it into plates, wire, pans, vessels, pins &c." The account continues by describing how brass wire is made "and done up in bundles of about forty shillings value each. About an hundred of these bundles of wire are made here every week, and each of these bundles makes an hundred thousand pins."

"The wires are cut into proper lengths, and the whole process completed here, employing a great number of girls, who with little machines worked with their feet, point and head the pins with such expedition, that each of them will do a pound and a half a day." – and - "Great quantities of aukward (sic) pans and dishes are also cast here, for the use of the Negroes on the coast of Africa".

"All the machines in these works are put in motion by means of water, which after passing over the water wheels, is thrown back into the mill-pond by means of a prodigious fire-engine ***(i.e. a steam pump)***, which raises near three thousand hogsheads every minute. This is reckoned one of the finest and best constructed engines in the world".

So almost two centuries ago, steam power was used to drive pumped storage of water to power a factory. In this way the steam pump could be run continuously at high efficiency, and a relatively constant head of water avoided power fluctuations in the machinery.

This is just one of the displays in this fascinating small museum – other themes include Douglas motorcycles (remember them?) and the Kleeneze brush company. Well worth a visit. Kingswood Heritage Museum is in Tower Lane, Warmley. It is open every Sunday May to September, 2pm to 5pm. During the winter it is open on the 2nd Sunday in the month, same times. Their website is www.kingswoodmuseum.org.uk.

By the way, if you had difficulty with the hogsheads, a hogshead is six firkins. No, seriously, a hogshead is about a quarter of a ton of water, or about the capacity of one and a quarter oil drums. So if we can believe the newspaper report, that the pump was shifting 12 tons of water a second, though it's not clear what the head of water was – not bad for 1814! ***Paul Hulbert***

HISTELEC NEWS

Thanks to Bill Tincknell the Histelec News first 30 editions covering ten years has been bound for posterity.

BOOK REVIEWS

"PORTISHEAD COAL BOATS"
by MT Winter

This excellent well researched book deals with the supply of coal by sea, initially to power stations in Bristol, then Portishead and later Gloucester, East Yelland and Hayle from the docks at Newport and Ely Harbour, near Penarth. The history of the operating company, Osborn & Wallis is recounted together with details of the fleet and the loading and discharge ports.

The author worked as a boy, deckhand and second engineer on various boats from 1955 to 1968 and gives a first hand account of both boats and ports. The text is well supported by ample photographs and diagrams and provides a documentation of a little known aspect of the electricity generation scene. ***Basil Stockbridge***

"ELECTRIC UNIVERSE" – How Electricity Switched on the World
By David Bodanis

This is a brilliant book suitable for anyone, even those with little knowledge of Electricity. It is an unusual perspective introducing a wider range of topics than you would anticipate. The author is described as a Oxford lecturer, now living in London, born in Chicago to Polish immigrant parents.

The book covers most of the inventors in the electrical field, introducing Edison into his "storyline" before Faraday. There is no mention of the conflict of systems, AC or DC and therefore Tesla is excluded. The invention of Radar and Computers are dealt with thoroughly with Turing high on the author's pedestal. The book finishes with a considerable explanation of "wet" electricity in the human body, i.e. brain and nervous system, which operates with a much slower atomic movement than in copper wires .

In an appendix, there is some interesting details about "Mr Amp, Mr Volt and Mr Watt". He says that even though Watt had nothing to do with electricity, he coined the word "horsepower" and therefore it was obvious when metrication was introduced that its replacement should be "watt". ***Peter Lamb***

"ELECTRIC LYME"
by Martin Roundell Green

This delightful book traces the history of the supply of electricity in the town of Lyme Regis from the establishment of the little Lyme Regis Electric Light and Power Company Ltd. in 1909 to its absorption into the South Western Electricity Board on the 1st April 1948. It remained independent to the end and only took supply from the "Grid" in 1943. From 1923 the undertaking was run by then Borough Council and the book follows the roll played by two of the local personalities, who ran the undertaking and kept it independent.

What makes the book so attractive is that it is not a dry technical description of the development of an electricity undertaking but a fascinating piece of social history of a small seaside town and the interplay between people, their jobs, social conditions and the influence these had on the development of a small, very independent, electricity supply system.

Despite a series of disasters towards the end of the undertaking's life there is a lot to see on the ground today in Lyme that relates to the past. The power station building (the Malthouse) is still there - despite the final disastrous fire - still used as a substation. The flour mill, long disused for it's original purpose - rescued and adapted to house a water turbine and became the Corporation Electricity Department stores before being abandoned a second time - has now been restored and is again a working flour mill - and houses a small exhibition about it's former electricity generating role. And all this hidden in the middle of a charming forgotten corner of the modern Lyme Regis!

In the early days Alban Woodruffe was instrumental in getting an electricity supply under way. He was a borough councillor and lived in the nearby Uplyme and with the help of an engineer called Balbiani he obtained a contract to supply Lyme Regis with street lighting. The second "personality" who had a long association with the company was Arthur Brown who became the company's resident engineer in 1920 and remained as Borough Electrical Engineer until his retirement in 1946. For the whole of his time with the undertaking he lived in a house that was virtually part of the generating station!

An amusing incident occurred after Mr. Brown's retirement. The new "boss" was not interested in providing material for the likes of SWEB and instructed Dick Hitchcock, one of the staff, to "clear out all those records and burn them". In true "Historical Society" manner, Dick could not bring himself to destroy these records - including the deeds of the Malthouse- and instead hid them behind one of the switchboards in the power station. Needless to say they were all destroyed in the subsequent fire. The intention was good!

There is a copy of the Book in our library. If you visit Lyme you can buy your own at £10 - whichever you do I can strongly recommend it. ***Roger Hughes***

SCOTTISH HYDRO

In May three members, Haynes, Palmen and Lamb, stayed with a Probus group at Loch Tummel Hotel visiting amongst other places, Loch Rannoch and Pitlochry Hydro-electric Power Station. We saw quite a few Hydro-stations en route and I was left wondering how they all operate, so I wrote to the Pitlochry Station and was rewarded with a book detailing all the Scottish Hydro Schemes, a useful reference book for our Archive Library.

It is interesting to note that in the Rannoch/Tummel scheme there are nine power stations, some of which are positioned such that some water will have passed through 5 stations, generating electricity five times. The largest stations are Errochty (75MW), Clunie (61.2MW), Rannoch (48MW) and Tummel (34MW). The Grampian Electric Supply Co. Ltd., built the first power stations in this territory and these were the Tummel and Rannoch in 1930 and 1933 respectively. ***Peter Lamb***

MOVING IMAGES
The Society Archive isn't just papers and photos – we also have a number of films and videos, going back to the early fifties. Film is a very fragile medium, so a few years ago we reached an agreement with the South West Film and Television Archive in Plymouth. They store our films for us in archival conditions and index them to make them available to researchers – excerpts of our films have appeared in some recent TV programmes.

The Film and Television Archive then provide us with copies, originally on VHS but now on DVD. With the help of WPD we are also starting to convert some of the VHS tapes to DVDs.

Have YOU got any old films that might be of historical interest? They don't necessarily have to be electrical, the Film and Television Archive could be interested in anything that shows "how we used to live" or of local interest for a village, town or industry. Please let Paul Hulbert know (tel 07771 562505 or email paul.hulbert@gmail.com) and he can put you in touch.

By the way, has anyone got any of the "copy" video tapes from our Archive? There are one or two missing. No names no pack drill, just let Paul or Peter Lamb have them… ***Paul Hulbert***

HULBERT'S PUZZLE CORNER –
Which Beatles songs featured a fire engine and a hogshead? (One answer for each) See next page.

PROJECTED TAMAR HYDRO-SCHEME
Non-member, Mike Wilkinson heard a talk given to Weston-s-Mare U3A by Peter Lamb and has written the following - I mentioned to you that in 1968 I did some preliminary investigation into the above power scheme. This hydro-electric station was to be equipped with the largest single generator powered by a water turbine in this country namely a 50MW unit. (The largest single powered generator at that time was 40MW, powered by a Francis turbine, at the Clachan power station at the head of Loch Fyne in Argyllshire - part of the Glen Shira Scheme, and was completed in 1954). My job at that time was that of a manufacturing engineer in the New Development & Process Dept. at the English Electric Hydro-Electric Division at Netherton in Lancashire looking into the problems of machining heavy engineering components. Somewhere about the autumn of 1968,1 was asked to investigate the manufacturing problems associated with the size of the heavy welded fabrications for the above project. As these were initial proposals no layout drawings were available. Nor were there any indications where the project was to be located. (I can only assume that it would be somewhere downstream from Morwellham). So the only information that was supplied came in the form of sketches and estimated weights for the main components (which unfortunately over the passage of time I no longer have!). l do however remember that the Main Stay Ring (or Turbine Support Ring) weighed in at 180 tons which was outside the capability of our largest boring mill, which could only turn a maximum of 150 tons weight. The only manufacturer, which could, at that time, supply a machine tool large enough was Innocenti of Italy at the cost quoted of £1M. I also investigated the comparative costs of turbine runner blades, as the water turbine was to be a Kaplan type. No contracts were awarded for this and other power schemes at that time because of government cut-backs in 1969.

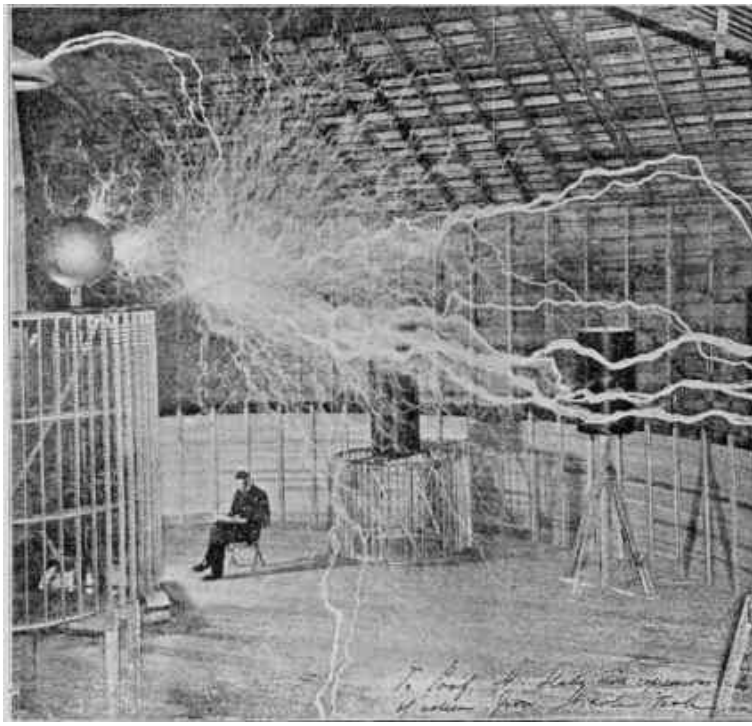
I hope that your members will find this of some interest and that some other evidence will come to light to confirm the existence of this proposed power scheme. There might possibly be references to this scheme In the Journal of The Institute of Electrical Engineers (now Institute of Engineering Technology), or in issues of the then Water Power magazine. ***Mike Wilkinson***
(Ed. If anyone knows of this, please contact the editor)

TERA-BLE CONFUSION
Oh dear, watt can the matter be,
Peter Lamb had to ring up the IEE,
His gigas and teras were all at sea,
He'd forgotten about indices.

He's known about kilos and megas for ever,
But ten to the power of twelve, no never,
So now we are all wondering whether,
He'd ever learnt indices.

(Not to mention the 'new' MKS !)
John Haynes

TESLA EXTRA
A photo sent by by Nicola Tesla to Professor A. Slaby from his hide-a way in the Rocky Mountains of Colorado when he shut himself off from the world as he was prone to do. Here he is reading his notes by the discharge from no doubt a Tesla Coil!



Submitted by Marcus Palmen

ALL-ELECTRIC CARS
The main car manufacturers have abandoned all-electric cars, concentrating on hybrids, following Ford discontinuing their Th!nk City and Peugeot their Partner. There are only four electric vehicles all imported on the market now – Reva G-Wiz, Aixam Mega Van, Maranello4 and the Twike, but who is likely to buy these strange sounding named vehicles, ranging in price from £8,000 to £15000?

Some members visited Honda Training Centre near Slough with RPEC recently, when they were shown the Honda Hybrid Car, which has a petrol engine working in tandem with an electric motor run off a battery with the surprisingly high voltage of 520volts.

AN INVENTOR FROM BATH
Most of us will know about William Friese-Green as an early pioneer of the cinema. But have you heard of his colleague, John Rudge? There is a plaque on a wall in New Bond Street Place, Bath saying:

"To perpetuate the name and memory of **John Arthur Roebuck Rudge**, who lived for many years in the adjoining house and after numerous experiments conducted in the basement was the first Englishman to produce moving pictures by means of photographs mounted on a revolving drum". "And also of his friend **William Friese-Green**, who had his studio at No. 9 The Corridor nearby, the inventor of commercial kinematography, being the first man to apply celluloid ribbon for this purpose". "Kinematography can thus be attributed to the labours of these two citizens of Bath, where this wonderful invention undoubtedly received its birth".

Born in Bath, Rudge was a scientific instrument maker with a sideline in novel magic lantern presentations. He met William Friese-Green in about 1880. Rudge did the technical work while Friese-Green dealt with the photography (he had a photographic shop in Bath) and gave public demonstrations.

Rudge's moving image projectors used slides or images on glass disks. The images were moved into position and then held still while the projector light was shone through them – a similar principle to the intermittent movement of film through the gate of a cine projector. It was this work that inspired Friese-Green to go on and use continuous film to show motion.

Rudge was a man of many parts. His other inventions included a quick-firing gun and a self-inflating lifebelt. He died in 1903, at the age of 66. ***Paul Hulbert***

BIBLE STORY
When the animals left the Ark, Noah told them to "go forth & multiply". As two snakes were leaving, they said "We can't multiply because we are Adders". Noah told them to wait by a pile of wood. When he eventually went to see them, he found lots of tiny Adders. "You said that you couldn't multiply" said Noah. But the snakes replied "Ah but we can by logs".

BATH OFFICE AT THE GROUP ENGINEERS' DINNER 1964 – can you name all those round the table. Geoff is second left, Roger Hanham is extreme right and Bruce Farrer centre
Photograph submitted by Geoff Yates, a regular contributor from Australia

Answers to Hulbert's Puzzle Corner:
A ***"hogshead of real fire"*** was in the show "Being for the benefit of Mr Kite" (Sergeant Pepper's Lonely Hearts Club Band)

It was the fireman in "Penny Lane" who ***"likes to keep his fire engine clean"*** (Magical Mystery Tour)

FOR YOUR DIARIES – a Reminder

PROGRAMME for the REST OF THE YEAR & THE NEW YEAR

Thur. 5th Oct. **VISIT TO CHRISTCHURCH ELECTRICITY MUSEUM** operated by Scottish & Southern. All day visit by car, involving a lunch-break at a super pub "The Fisherman's Haunt" at Winkton.

Thurs. 9th Nov. **MEETING AT CAIRNS ROAD**
Talk "Clifton Rocks Railway" by Peter Davey.
Look around Museum from 11.30am followed by lunch at the Cock O' The North. Talk commencing 2.00pm.
First "Open Meeting" for members at Cairns Road.

Sat.27th Jan. **ANNUAL WINTER LUNCHEON**
12.00 noon at the Gisson's Arms near Exeter off the A38. John Muggleton has agreed to be the speaker "TQM and all that Jazz".

NEXT EDITION
This newsletter is produced every four months. Please send information, articles, photographs or letters to :-
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