



Eastwick
Model Dairy
conserved at
Weald and
Downland
Living Museum,
see page 3



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SIHG Newsletter No 228 November 2020

Enquires to Programme Co-ordinator Bob Bryson: 01483 577809, meetings@sihg.org.uk.

SIHG online ZOOM Meetings November 2020 to March 2021

12 November 2020

William Morris / John Hawks, Wandle Industrial Museum

26 November 2020

**Nelson & HMS Victory: Their Lives and Times /
Colin van Geffen, artist & historian**

10 December 2020

Mulberry Harbours and Pluto Pipelines / David Williams

7 January 2021

Historic Agriculture in SE England / Geoffrey Mead

21 January 2021

Renewable Energy - Is it too late!! / Richard Rumble

4 February 2021

Daniel Gooch - Brunel's Locomotive Engineer / John McGuinness

18 February 2021

Guildford Industries / David Rose

4 March 2021

Calcutta and Beyond -India's Industrial Heritage / Paul Whittle

Online Meetings

Since the last Newsletter was printed the SIHG Committee have decided that SIHG will not hold face-to-face lectures during the remainder of 2020, nor in Spring 2021. We are holding virtual lectures using Zoom during this period. Those members who regularly attended our lectures in either Guildford or Leatherhead should have already received a number of emails from me on this subject.

Members who have not heard from me but may be interested in attending these (free) virtual lectures should let me have their email address and phone number so I can ensure they are kept up-to-date with our programme.

Other (free!) Online Lectures

Numbers of other organisations currently offer free *Zoom* lectures and you may wish to try *Surrey History Meetup* which holds talks many of you may find interesting, <https://www.meetup.com/Surrey-History-Meetup/>
You do however need a computer connected to the Web, ideally with a camera and microphone.
You then need to download Zoom, join the group, and then register for each talk you wish to attend.

Please support SIHG

Please renew your Membership promptly (if you have not already done so).

Please send a contribution for the Newsletter

Even if you have not been able to travel to exciting places recently, you may have **explored ideas** or made your own **interesting discoveries** - either through **reading** or by **making models** (for example).

Consult our website www.sihg.org.uk for updates on online talks

Eastwick Park Ornamental Dairy Restored *by Jan Spencer*

I had caught glimpses of this building, round the corner from where I lived in Great Bookham, as it decayed over the years, so I was pleased to hear that plans had finally been made for its preservation.

In April 2011 the LDHS reported that permission had been granted for the dismantling of the derelict dairy and its transfer to the Weald and Downland



The restored roof structure assembled in the workshop of the grid-shell building

Museum Open Air Museum at Singleton, ref 1.

On a recent, September 2020, visit to Singleton I was thrilled to be confronted by the startlingly gleaming white apparition in front of me. Thatch had replaced the tiled roof and the brickwork had been coated with white paint. This is an example of 'polite' architecture, a place where the lady of the house could enjoy being a 'milk maid'.

The museum's carpenters, led by Joe Thompson, had restored and reconstructed the roofing, using original timbers where possible and new timbers made using

the same techniques where necessary. Old records mentioned thatching, but physical evidence remained elusive until some marks of tarred twine were found on rafters after months of searching, ref 2.



One of the tarred twine marks - evidence of thatching

See also photos on page 1, by LDLHS, Weald and Downland Museum, and Jan Spencer respectively. ☐

References

- 1 Leatherhead & District Local History Society report, which also has a plan of the building <https://leatherheadhistoryarchive.org/?s=eastwick+model+dairy>
- 2 Weald and Downland Museum Living Museum (as the museum is now rebranded); illustrated account of the re-assembly of the dairy www.wealddown.co.uk/conserving-the-ornamental-dairy-from-eastwick-park-great-bookham-surrey/
- 3 www.wealddown.co.uk/buildings/eastwick-park-dairy/
- 4 <https://leatherheadhistoryarchive.org/?s=eastwick+model+dairy>

Thames Floods 1953 *by Peter Tarplee*

Attending the recent talk by Doug Irvine on the Thames Barrier and its construction I was reminded of my activities on Sunday 4 February 1953. I had spent the morning at my local tennis club where a fellow member gleefully told me that some power stations in Kent were flooded. I was pleased to tell him that I worked in Surrey.

I arrived home later to be told that there had been a phone message requiring me to phone our control centre. [Remember, there no mobile phones in 1953]. They told me to go as soon as possible to Dartford police station. On arriving at Dartford we found parts of the town centre flooded and Joseph Well's fireworks factory at North Reach had become flooded and the subsequent explosions were causing many shop windows in the town centre to shatter.

The police explained that the river had burst its banks and was now flowing south of Littlebrook power station but north of the town; but we would be O.K. as they have got some keen army cadets who are waiting to row us across the river in canvas dinghies. Our

boss quickly agreed that we were keen to go as soon as possible but that he would remain on dry land.

The cadets got us safely to our destination but when we wanted to return home they had gone and been replaced by some Royal Marines with a DUKW. This was a great improvement; they said; "we'll drive along the access road until the water gets too deep, then we use our screws to get across the river". They didn't realise that the road was some feet above the surrounding fields and in the dark the vehicle went off the road and neither the screws nor the road wheels had any effect. We were evacuated by boat, and the DUKW was back on the road the next morning

The breach in the river wall was filled with many, many lorry-loads of chalk from a railway cutting at Knockholt and the generators returned to service after remedial work and testing. We were soon able to drive to the station again and after many weeks of working night and day 12-hour shifts we received a nice letter from someone saying "thank you". ☐

Swallow's Tiles (Cranleigh) Ltd - Brookhurst Brick and Tile Works

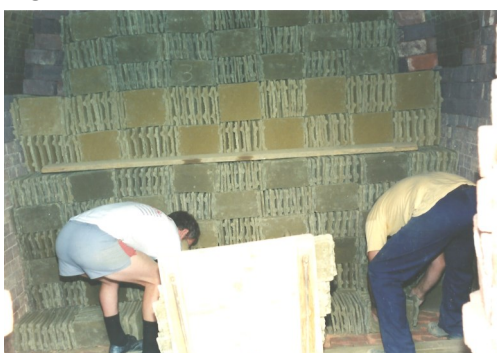
Record of a Visit on 23 August 1995 by *John Cooksey*

On the 23rd August 1995, I made a pre-arranged visit to Swallows tiles arriving there at 10.30am. I made myself known at the works office, and was told to make my own way around but to take care. For the next two educating hours plus, I wandered around the yard photographing and taking video, of the whole production of hand making of roofing tiles, from the extraction of the clay to the final product after firing. Brick, glazed pipes, and roofing tiles have been made here since the yard was opened in 1894, and has always been a family business, but the production of hand-made roofing and the other tiles that work with them, have been the only output since 1945.



The clay was originally extracted from workings very close to, the yard, that were not too deep, using picks and shovels and a roped worked narrow gauge tubway in a single skip to the crushing mill. Today the skip has gone, and the clay is extracted by a mechanical shovel, and taken to the clay processing plant by a small dumper from a site now a few hundred yards away, the old workings have now filled with water which is used around the works. The clay is taken to the building where it is to be processed and goes through firstly in a mixer/crusher, then up a belt elevator to a pan mill where it is again put under heavy revolving rolls; some water is then added and it is then

pushed through the perforated base of the pan, and taken on another belt to a large old gear driven press / extruding machine and forced out through a mouth piece, and cut with a bow into sods, as they are called down there, into sizes approx 12"x12"x6", these are then taken by barrow to the tile makers.



As the moulding shed is two storey, a belt is used to take the clay to, the top floor, then by barrow to the tile moulder. In this particular building there were four makers downstairs and five above, there were two other makers in another building one making normal sized tiled, and one making specials. A moulders weekly work would be approx 4,500 tiles of the normal 10"x6" size. After making, the tiles are left to dry for 16 days, they are then taken on single-wheel barrows to the kilns for firing. There are four men employed for this part of the process, two



wheeling and two setting, which is the term for placing the tiles in the kiln prior to firing, and this is a skilled job, as they must be set correctly to, allow the fire get

between each tile, to burn them properly.

At Swallows Tiles there are three rectangular down-draught kilns, with a total capacity of 64,000 tiles; the kilns take about a week each to fire to a temperature of 400°C. After drawing or emptying of the kilns the tiles are then checked, sorted and stacked on pallets awaiting despatch. The kilns were coal fired until 1983, and are now gas fired; the newest of the kilns does not have a conventional



wicket or door way, that is bricked up prior to firing, but instead has a sliding door lined with refractories.

My thanks must go first to Mr Roger Swallow, for allowing the visit, and secondly to all the

people who worked there, for making the visit so friendly educating and enjoyable. □

J C 23.8.1995.

Julie McCauley kindly sent us her father's account of his visit to Swallow's Tiles, accompanied by a series of photographs.

The Brookhurst Brick and Tile Works site is now a housing estate, but a few signs of its former existence may still be visible.

SIHG now hosts the archived Swallow's Website at www.sihg.org.uk/swallowsrooftiles/

See images of the half-demolished factory in 2010 at www.28dayslater.co.uk/threads/swallows-tiles-cranleigh-26-12-2010.56272/

► A group from SIHG visited Swallow's tiles on 3 May 2007 (see Newsletter 156) and its closure was filmed and reported in Newsletter 163 May 2008, visit: www.sihg.org.uk/newsletter.htm



Swallow's Tiles (Cranleigh)
Record of a Visit in
August 1995
by John Cooksey
- see previous page



Surrey Archaeological Society

www.surreyarchaeology.org.uk

Recent Books & Articles Added to the Library Stock September 2020

compiled by Hannah Jeffery, Assistant Librarian

It is normally possible to visit the Library by prior arrangement at
Hackhurst Lane Abinger Hammer RH5 6SE
librarian@surreyarchaeology.org, 01306 731275

Wealden Iron Research Group Bulletin

40, 2020 A middle Iron Age bloomer at Birchen Lane, Haywards Heath, West Sussex, by Garrett Sheehan 5-29 (early iron working evidenced at Brooklands, Weybridge and St. Ann's Heath School, Virginia Water)

Glassworking in England from the 14th to the 20th century,

by David Dungworth, Historic England, 2019 S4

Archaeologia Cantiana

141, 2020 The brickmaking industry in Kent c.1825-1900, by Peter Tann, 123-47 (Conyer Brickworks was owned by Eastwood & Co. a lime, cement and brickmaking company based in Lambeth)

Cobham Conservation & Heritage Trust Newsletter

59, 2020 'Concrete Bob' and the McAlpines dynasty, by Ita Lawton, 12-13 (bought Knott Park, Oxshott, in 1917)

Croydon Natural History and Scientific Society Bulletin

168, 2020 Our changing landscape and the story of Coulsdon Chalk, by Pauline Payne, 12-14

Current Archaeology

31.5, 2020 Finds Tray, 13 (post-medieval copper-alloy button with 'Stuart enamel'-type decoration previously known as 'Surrey enamels')

Domestic Buildings Research Group (Surrey) Newsletter

145, 2020 Felbridge Rope Yard, by Jeremy Clarke, 7-9

Wealden Iron Research Group Bulletin

40, 2020 A middle Iron Age bloomer at Birchen Lane, Haywards Heath, West Sussex, by Garrett Sheehan 5-29 (early iron working evidenced at Brooklands, Weybridge and St. Ann's Heath School, Virginia Water)

Leatherhead and District Local History Society Newsletter

September Leatherhead Station, October 1963, by Richard Burningham, 9-11 2020

Surrey Industrial History Group Newsletter

227, 2020 Rapsons, Duophone, Decca and Venners: industrial History in New Malden, by Norma Cox, 4-10 (Burlington Road, New Malden)

The industries of the Wandle, by Bob Bryson, 11-12, 18-20

How did we manage before refrigerators? (Part 2), by Peter Tarplee, 21-6 (ice merchants)

Historic England

September, Unusual Second World War sites listed and upgraded to mark the 80th 2020 anniversary of the Battle of Britain, appendix 1

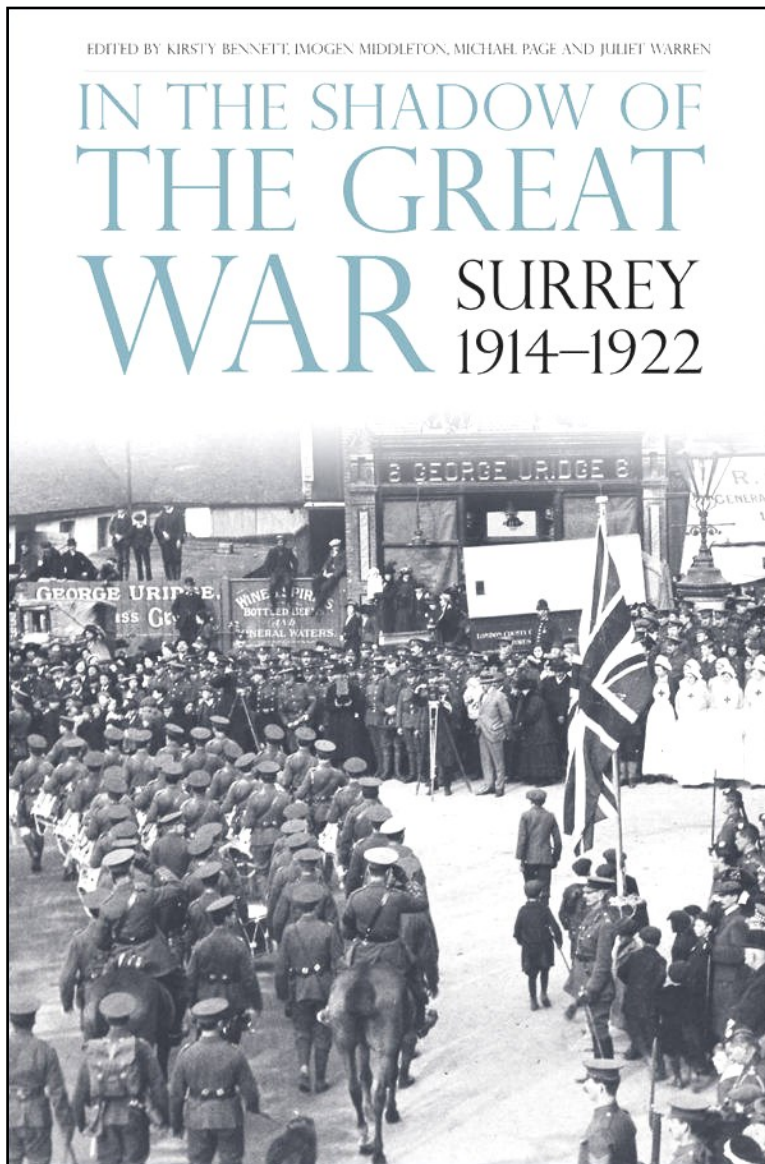
(includes boys' air raid shelter at St John's Primary School, Redhill)

Boys' Air Raid Shelter at St John's Primary School, Redhill Online record:

<https://historicengland.org.uk/listing/the-list/list-entry/1471390>

Elephants, Conkers and Belgian Toymakers - Surrey in WWI

New Book from Surrey History Centre



Imagine for a moment ... taking a peaceful summer ramble through the Hurtwood, enjoying the typical sounds and sights of a woodland walk, only to have the peace interrupted by the sound of the 'great guns' spreading into southern England and resonating around the Surrey Hills. You had thought the only airborne sound was that heard further north, where the skies over Brooklands are filled with Surrey-made aircraft being tested before heading off to the Western Front. The large area of deserted common land near your village is now a sea of bell-tents, housing enemy aliens and prisoners of war. At the farm down the road, elephants are now pulling the ploughs and, as if their trunks were purpose-grown

for the task, bundling hay onto carts. Wheat now sways in the breeze on the course where you enjoyed a round of golf. The conkers your children collect are no longer for entertainment, but to be sent to King's Lynn for the extraction of acetone for the manufacture of explosive cordite. Your children also love to help collect eggs for the newly-opened Red Cross Hospital at the nearby manor house, at which your eldest daughter is proudly wearing her uniform as a volunteer nurse. Your wife, meanwhile, works for the local women patrol ensuring young soldiers and munitions workers behave in the back rows of the cinema. Your local rector, who speaks fluent German, has aroused suspicion amongst both parishioners and authorities as having pro-German sympathies. On your recent trip to Richmond you have found to your surprise an array of Belgian shops: a patisserie, a tobacconist, a toymaker and cafes, serving the large number of Belgian refugees now residing there.

With the traditional strong focus on the impact of large numbers of local men going off to war and the consequent devastating losses, it may have been hard to imagine the variety of other ways in which the First World War touched life in Surrey, but these and hundreds of other fascinating stories of the war's impact on the home front have been uncovered by Surrey Heritage over the four-year centenary of the First World War through its National Heritage Lottery Fund-supported project *Surrey in the Great War: A County Remembers*. Volunteers have been researching their localities and contributing information and stories to the project's website,

www.surreyinthegreatwar.org.uk.

The discoveries made have now been captured in an engaging and beautifully-illustrated book, *In the Shadow of the Great War: Surrey 1914-1922*, which, drawing on the rich archives at Surrey History Centre, explores the experiences of those living and working in Surrey at that time. Recently published, the book is priced at £14.99 and is available from Surrey Heritage's online shop at:

www.surreycc.gov.uk/culture-and-leisure/history-centre
or by phoning 01483 518737. ☐

(The book is also available on Amazon.)

Anniversaries compiled by Jan Spencer

General references

Chronology of the Modern World: 1763-1965 (Penguin reference books) by Neville Williams, 1975

Top 10 science anniversaries in 2020 - by Tom Siegfried
www.sciencenews.org/article/top-10-science-anniversaries-20

List of technologies 2 mya to the Renaissance https://en.wikipedia.org/wiki/List_of_technologies
<https://en.wikipedia.org/wiki/>

[Please note that a few dates may be only approximate. I think “Chronology” may have been desperate for entries!]

1020 - 1000 years ago

Cnut/Canute the Great codifies the laws of England (approximate date).

1220 - 800 years ago

800th birthday of **Roger Bacon**, *Doctor Mirabilis*, a Franciscan friar from Somerset, was one of the earliest European advocates of the **modern scientific method**. Bacon applied the empirical method to observations in texts attributed to Aristotle. Bacon discovered the importance of empirical testing when the results he obtained were different than those that would have been predicted by Aristotle.

1520 - 500 years ago

Ferdinand Magellan, a Portuguese explorer who organised the Spanish expedition to the East Indies from 1519 to 1522, resulting in the first circumnavigation of the Earth.

Despite a series of storms and mutinies, in 1520 they made it westward through the Strait of Magellan **into the “peaceful sea” (the modern Pacific Ocean)**. (Magellan was killed in a battle in the Philippine islands in 1521.)



A 1561 map of America showing Magellan's name for the pacific, *Mare pacificum*, and the Strait of Magellan, labelled *Frenum Magaliani*.

1620 - 400 years ago

400th birthday of John Graunt (24 April 1620 – 18 April 1674) has been regarded as the **founder of demography**. He was one of the first demographers, and perhaps the **first epidemiologist**. He produced the first life table, giving probabilities of survival to each age.

1606.

A TABLE of the
CHRISTENINGS and MORTALITY
For the Year 1605 and 1606.*

Weeks.	Days of the Month.	Christ.	Bur.	Pla.	Par. infec.	Weeks.	Days of the Month.	Christ.	Bur.	Pla.	Par. infec.
1	Dec. 26.	100	116	5	5	28	July 3.	109	110	25	12
2	January 2.	117	151	6	5	29	10.	111	134	33	18
3	9.	130	138	4	4	30	17.	115	146	50	22
4	16.	124	138	3	2	31	24.	96	140	46	26
5	23.	143	121	6	4	32	31.	132	178	66	29
6	30.	124	101	3	2	33	August 7.	131	181	67	29
7	Febr. 6.	122	105	5	5	34	14.	141	197	75	33
8	13.	131	118	7	6	35	21.	133	189	85	28
9	20.	126	109	12	6	36	28.	125	207	85	29
10	27.	102	117	9	8	37	Septem. 4.	123	241	116	32
11	March 6.	110	98	7	4	38	11.	134	216	105	28
12	13.	126	137	9	7	39	18.	121	214	92	36
13	20.	123	133	14	11	40	25.	132	204	87	35
14	27.	134	123	17	8	41	October 2.	121	256	141	40
15	April 3.	123	114	13	9	42	9.	134	218	106	38
16	10.	132	145	27	11	43	16.	142	227	117	37
17	17.	139	129	12	8	44	23.	131	224	109	38
18	24.	118	110	11	7	45	30.	124	226	101	34
19	May 1.	92	136	17	10	46	Novem. 6.	136	183	68	27
20	8.	116	103	13	11	47	13.	125	162	41	20
21	15.	128	94	13	8	48	20.	121	145	28	11
22	22.	113	132	14	9	49	27.	143	123	22	13
23	29.	94	98	9	7	50	Decem. 4.	155	160	45	17
24	June 5.	129	112	16	8	51	11.	135	137	38	20
25	12.	127	112	19	14	52	18.	136	132	28	15
26	19.	121	119	15	10	53	25.	134	135	38	19
27	26.	132	126	24	16						

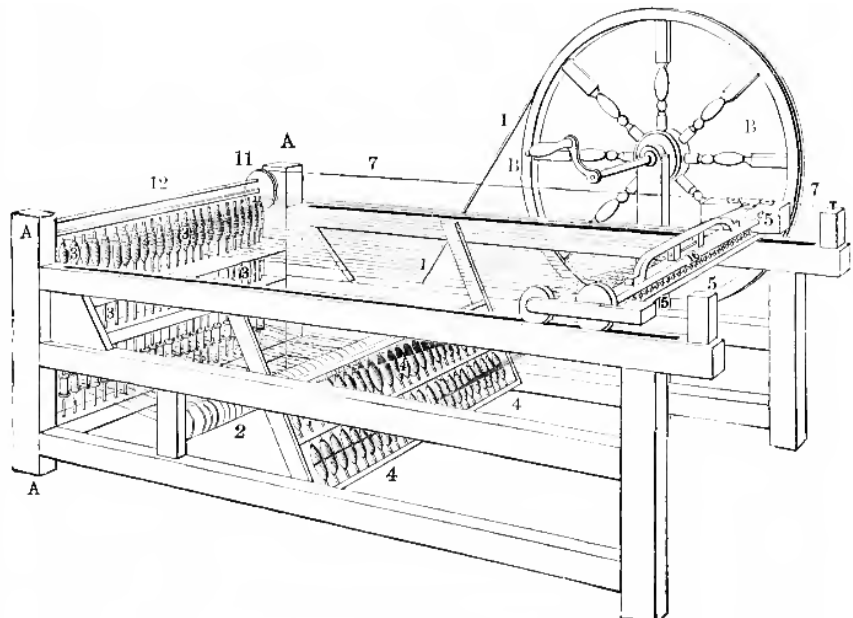
The Totals { Christened — — 6614
Buried — — 7920
Whereof of the Plague 2124

* BELL's London's Remembrancer.

Bill of Mortality from 1606, one of the earlier times which John Graunt looked at in his work.

1720 - 300 years ago

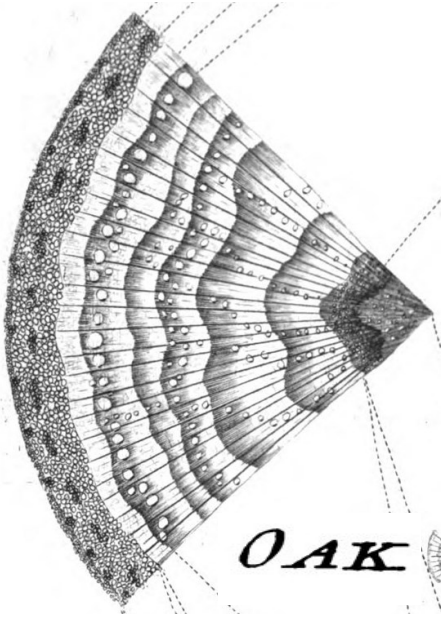
James Hargreaves, English inventor was born (died 1778). He was a weaver, carpenter and inventor who lived and worked in Lancashire. He invented the **spinning jenny** in 1764, contributing to the mechanisation of spinning.



The improved spinning jenny that was used in textile mills

1770 - 250 years ago

Leonhard Euler (1707 - 1783), a Swiss mathematician worked in the German and Russian royal courts. He published books on **graph theory** and **infinitesimal calculus**.



John Hill (1714 - 1775) from Peterborough published an influential book on the **microscopic structure of wood** which established the importance of this study.

http://microscopist.net/Cumming_Hill.html

Jesse Ramsden (1735 - 1800) constructed the first truly modern **screw-cutting lathe**, enabling the precise calibration of scientific instruments.

James Cook (1728 - 1779) discovers **Botany Bay**, Australia, landing at Kamay Botany Bay on 29 April.

Birth of **William Huskisson**. A railway enthusiast, he was at the opening of the Manchester and Liverpool Railway in 1830. He lost his balance and fell into the path of Stephenson's *Rocket*, which ran over Huskisson's leg. He died later the same day - **the earliest railway accident?**

1820 - 200 years ago Bi-Centennial

Danish scientist **Hans Christian Ørsted** had discovered in 1820 that an **electrical current** in a wire from a battery caused a nearby **compass needle to deflect**. This was a key event in the development of electromagnetism

12 May - Birth of **Florence Nightingale** (d. 1910). She was an English social reformer, statistician and the founder of modern nursing. She ran military hospitals during the Crimean War, in which she organised **thoughtful care for wounded soldiers**. She gave nursing a favourable reputation.

16 July - Opening of the **Union Chain Bridge** across the River Tweed between England and Scotland. When it opened in 1820 it was the **longest wrought iron suspension bridge** in the world with a span of 449 feet (137 m), and the first vehicular bridge of its type in the United Kingdom.



Birth of **Herbert Spencer** (d. 1900). He was an English philosopher, biologist, anthropologist, and sociologist famous for his **theory of social Darwinism** whereby superior physical force shapes history. Spencer originated the expression "survival of the fittest".

1820 - 200 years ago - Bi-Centennial

André-Marie Ampère (1775 - 1836) was a French physicist and mathematician who was one of the founders of classical **electromagnetism**. Inspired by the Danish physicist Hans Christian Ørsted, he invented the solenoid and the electrical telegraph. The SI unit of current is named after him.

The **Regents Canal, London** was completed in 1820. It was built too close to the start of the railway age to be financially successful and at one stage the Regent's only narrowly escaped being turned into a railway.

Rich deposits of **Platinum** were discovered in **Ural Mountains**. Alluvial Platinum in the Urals yielded in excess of 500 tonnes of platinum mined to date, from a number of these 'placer' fields.

The 116-ton **Aaron Manby**, the **first iron steamship to go to sea**, was launched. The ship was built by Aaron Manby at the Horseley Ironworks, Tipton, Staffordshire, then shipped in pieces to Rotherhithe on the Thames. She made her maiden sea voyage across to France in 1822. The engine was of the oscillating type, designed and patented (British Patent No 4558 of 1821) by Aaron Manby.

1870 - 150 years ago

Zénobe Théophile Gramme (1826 - 1901) was a Belgian electrical engineer. He invented the **Gramme dynamo** with a ring armature capable of generating very smooth output at much higher voltages than previously. (He later realised that the device could be run backwards as an electric motor.)

Adolf von Baeyer (1835 - 1917) was a German chemist who synthesised **indigo dye** and developed a nomenclature for cyclic compounds. In 1905 he received the Nobel Prize in Chemistry.

Railway Mileage in GB: 15,310

1895 - 125 years ago

8 November - Wilhelm Conrad Röntgen (1845 - 1923), a German mechanical engineer and physicist, produced and detected electromagnetic radiation in a wavelength range known as X-rays or Röntgen rays, an achievement that earned him the first Nobel Prize in Physics in 1901. Today, Röntgen is considered the father of diagnostic radiology, the medical speciality which uses imaging to diagnose disease.

In 2004 the element 111, was named roentgenium, after him.

First medical X-ray by Wilhelm Röntgen of his wife Anna Bertha Ludwig's hand



28 September - Death of **Louis Pasteur** (b. 1822). He was a French biologist, microbiologist, and chemist renowned for his discoveries of the principles of **vaccination**, **microbial fermentation** and **pasteurization**. He helped to establish the germ theory of disease.

The Time Machine is a science fiction novella by **HG Wells**. The work popularized of the concept of time travel by using a vehicle or device to travel purposely and selectively forward or backward through time.

The **Northrop Automatic Loom** was a fully automatic power loom marketed by George Draper and Sons, Hopedale, Massachusetts. It was named after **James Henry Northrop** (1856 - 1940) who invented the **shuttle-charging mechanism**.



1895 - 125 years ago

Italian inventor and engineer **Guglielmo Marconi** (1874-1937) developed, demonstrated and marketed the first successful long-distance **wireless telegraph**. A breakthrough came in the summer of 1895, when Marconi found that much greater range could be achieved after he raised the height of his antenna and earthed his transmitter and receiver. With these improvements, the system was capable of transmitting signals up to 3.2 km and over hills.

The Lumière Brothers, Auguste and Louis, invent the **cinematograph**. In 1895, they applied the name to a device that was mostly their own invention. They made their first film, *Workers Leaving the Lumière Factory* (**Sortie de l'usine Lumière de Lyon**), that same year. The first commercial, public screening of cinematographic films happened on 28 December 1895 at Salon Indien du Grand Café in Paris. This history-making presentation featured ten short films, including their *Workers* Film. Each of these early films is 17 meters long, which, when hand cranked through a projector, runs approximately 50 seconds.

20 June - **Kiel Canal** was officially opened by **Kaiser Wilhelm II**. The canal, for transiting from Brunsbüttel on the Elbe Estuary to Holtenau on the Kiel Fjord, had taken over 9,000 workers eight years to build. The waterway was named the *Kaiser Wilhelm Kanal* (after his grandfather, Kaiser Wilhelm I). In 1948 it was renamed the **Kiel Canal** (German: *Nord-Ostsee-Kanal*).

Scottish chemist **Sir William Ramsay** (Nobel Prize 1904) detects, by spectroscope, **helium** found from a **terrestrial source**. His work in isolating argon, helium, neon, krypton and xenon led to the development of a new section of the periodic table, the noble gases. **Helium** is chemical element number 2, with the symbol **He**. It is a colourless, odourless, tasteless, non-toxic, inert, monatomic gas. The Swedish chemists, **Per Teodor Cleve** and Nils **Abraham Langlet**, discovered helium independently of Ramsay.

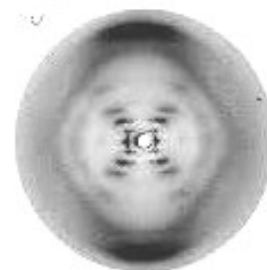
1920 - 100 years ago - Centennial

The **Great Debate in Astronomy**. **Harlow Shapley** and **Heber D Curtis** truly argued over the “Scale of the Universe” as the debate’s title suggests. Curtis argued that the Universe is composed of many galaxies like our own, which had been identified by astronomers of his time as “spiral nebulae”. Shapley argued that these “spiral nebulae” were just nearby gas clouds, and that the Universe was composed of only one big Galaxy.
<https://apod.nasa.gov/debate/debate20.html>

15 June - **First official publicised sound broadcast** in Britain opened by **Guglielmo Marconi** at the Essex village of Writtle using two 450 feet radio broadcasting masts. <https://marconibooks.co.uk/2mt.php>



26 July - Birth of **Rosalind Franklin**, known for her work on the **X-X-ray diffraction images of DNA**, particularly **Photo 51**, while at King's College London, which led to the **discovery of the DNA double helix** by three scientists who shared the Nobel Prize in Physiology or Medicine in 1962. (Rosalind Franklin had died in 1958.)
www.nature.com/scitable/topicpage/rosalind-franklin-a-crucial-contribution-6538012/



Prediction of the neutron - **Ernest Rutherford**, head of Cambridge University’s nuclear physics lab, had just discovered the proton but suggested that there could also be a particle with mass but no charge. This would explain why atoms were heavier than the atomic number indicated. He called the new particle a **neutron**. (James Chadwick proved the existence of the neutron by experiment only in 1932.)
<http://chemistry.bd.psu.edu/jircitano/neutron.html>

1920 - 100 years ago - Centennial

31 October - **944 Hidalgo** was **discovered** by German astronomer **Walter Baade**. Hidalgo is classified as a *centaur*, like an asteroid, but with a very eccentric and dynamically unstable orbit, reaching past Saturn.

The **Thompson sub-machine gun** was designed by **Brigadier General John T Thompson** and demonstrated at Camp Perry in 1920. This weapon became widely used in the US Prohibition era (by both gangsters and law enforcers), and became popular around the World



The decade of 'lighter than air' **airships** begins

1940 - 80 years ago

Neptunium (Np, element 93) was first synthesized by Edwin **Mattison McMillan** (1907 - 1991) (Nobel Prize 1951) and **Philip Hauge Abelson** (1913 - 2004) at the Berkeley Radiation Laboratory. Neptunium is a radioactive actinide metal, the first transuranic element.

27 May - 4 Jun - **Dunkirk evacuation**. Large numbers of Belgian, British, and French troops were cut off and surrounded by German troops. On the first day only 7,669 Allied soldiers were evacuated, but by the end of the eighth day, 338,226 had been rescued by a hastily assembled fleet of over 800 vessels. These **Little Ships of Dunkirk** aided 39 British Royal Navy destroyers, four Royal Canadian Navy destroyers and at least three French Navy destroyers.

10 July - 31 October - **Battle of Britain**. The Royal Air Force (RAF) and Fleet Air Arm (FAA) of the Royal Navy defended the United Kingdom (UK) against large-scale attacks by Nazi Germany's air force, the Luftwaffe. The RAF proved to be a better combat force than the Luftwaffe in almost every respect. The decisive factors were British capability and determination; and the use of radar ("RDF", radio direction finding), but German mistakes, before and during the battle, contributed significantly to the outcome.

30 August - **JJ (Sir Joseph John) Thomson** died (b. 1856). He was a British physicist and Nobel Laureate in Physics (1906), who discovered the electron, the first subatomic particle to be recognized.

1945 - 75 years ago

Biro, the first commercially successful **ballpoint pen** goes on sale in the USA.

8 May **VE Day** - Victory in Europe Day is the day celebrating the formal acceptance by the Allies of World War II of **Germany's unconditional surrender** of its armed forces marking the end of World War II in Europe.

6 August - The first **atomic bomb** was dropped by a United States aircraft on the Japanese city of Hiroshima; the device was **2,000 times more powerful** than the largest bomb used to date.

15 August Japan surrenders - Victory over Japan Day - or **VJ Day** - marks **the end of WWII**.

Howard Walter Florey, Baron Florey, (1898 - 1968) an Australian pharmacologist and pathologist shared the Nobel Prize in Physiology or Medicine in **1945** with **Ernst Boris Chain**, (1906 - 1979) a German-born British biochemist and Sir Alexander Fleming. Fleming first observed the antibiotic properties of the mould that makes penicillin, but it was Chain and Florey who developed it into a useful treatment.

After secret developments in **RADAR** use in tracking enemy aircraft in WWII, the achievements were **widely publicised**.

Synthesis of Vitamin A. Netherlands chemists **JF Arens** and **DA van Dorp** developed the earliest synthesis of Vitamin A. Vitamin A (retinol) is an essential micronutrient which humans must ingest from animal or plant sources. Its biological functions include general growth, vision, reproduction and the differentiation of epithelial tissue. Vitamin A deficiency disorders are an important cause of child mortality.

<https://community.dur.ac.uk/i.r.baxendale/papers/Tet2016.72.1645.pdf>

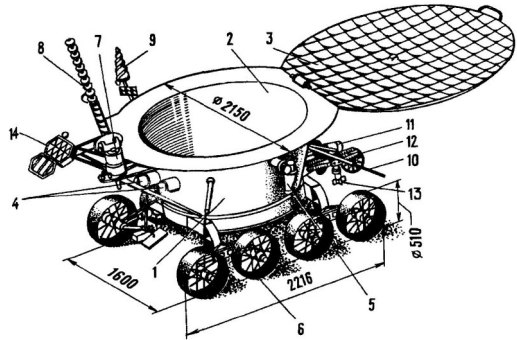
Railway Mileage in GB 50,555.

1970 - 50 years ago

5 January - **Death of - Max Born** (b. 1882), German physicist and recipient of the **Nobel Prize** in physics in 1954.

11 April - **Apollo 13** ill-fated space mission was launched from Cape Canaveral, Florida (later the Kennedy Space Center), but returns safely to earth on 17 April

17 November -
Luna program:
The Soviet Union lands
Lunokhod 1
on Mare Imbrium
on the Moon.



17 November - **Douglas Engelbart** patented the first **computer mouse**.

2000 - 20 years ago

March – **Iceberg B-15**, with a surface area of 11,000 km² (4,200 sq mi), calves from the Ross Ice Shelf of Antarctica.

4 May – A rare **astronomical conjunction** occurs on the New Moon including all seven of the traditional celestial bodies known from ancient times until the discovery of Uranus in 1781; this conjunction consists of the Sun and Moon, Mercury, Venus, Mars, Jupiter and Saturn.

26 June – The ‘Rough draft’ of the **human genome** is announced jointly by President of the United States Bill Clinton and British Prime Minister Tony Blair. There are approximately 22,300 protein-coding genes in human beings, the same range as in other mammals. However, the human genome has significantly more segmental duplications (nearly identical, repeated sections of DNA) than had been previously suspected.

1990 - 30 years ago

3 October - German reunification: **German Unity Day** “*Tag der deutschen Einheit*”, when eastern German industry reconnected to the west. For example, the glass industry of Lauscha in Thuringia could relink by road and rail to Coburg in Bavaria

1995 - 25 years ago

On 5 June the first actual **Bose-Einstein condensate (BEC)** was produced in the laboratory by **Eric Cornell** and **Carl Wieman** at the University of Colorado.

This “fifth state of matter”, formed when a gas of bosons at low densities is cooled to temperatures very close to absolute zero (-273.15 C), was predicted in 1925 by **Albert Einstein** and **Satyendra Nath Bose**.

2010 - 10 years ago

- 3 January – **British scientists** report that they have made artificial arteries out of flexible polymer. (Royal Free Hampstead)
- 1 March – **NASA** announces that the Moon's northern pole contains **millions of tons of water ice**. (MSNBC)
- 7 April A team of **Russian and American scientists** announce the creation of the newest **superheavy element, tennessine** (element 117). (*Science Daily*) (*Phys. Rev. Lett.*)
- 7 April The first known **animals** to live their lives **entirely without oxygen** - members of the phylum **Loricifera** – are discovered in the L'Atalante basin deep under the Mediterranean Sea. (*Science Daily*) (*BMC Biology*)
- 8 July – The Swiss **Solar Impulse aircraft** performs the first ever **24-hour non-stop flight powered purely by solar energy**. (Engadget)
- 20 March - **Robin Milner died** (b. 13 January 1934). He was a British computer scientist, and a Turing Award-winner. He developed **Logic for Computable Functions** (LCF), one of the first tools for automated theorem proving. The language he developed the first language with **polymorphic type inference**. Milner also developed the **calculus of communicating systems (CCS)**.
- 14 October Death of - **Benoît Mandelbrot** (b. 1924), Polish-born French-American mathematician, pioneer of the study of **fractals**.

2019 - 1 year ago

The **COVID-19 pandemic**, also known as the **coronavirus pandemic**, is an ongoing pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), first identified in **December 2019** in Wuhan, China. The outbreak was declared a Public Health Emergency of International Concern in January 2020 and a pandemic in March 2020. As of 8 November 2020, more than 49.8 million cases have been confirmed, with more than 1.25 million deaths attributed to COVID-19.

The deadline for **submitting copy** for the next Newsletter is

20 January 2021

Submissions are accepted by email to news@sihg.org.uk, on a memory stick or even in typescript.

Anything related to IA will be considered.

Please note that our Web address will be upgraded in the near future to be recognized as secure:

<https://www.sihg.org.uk>

The SIHG Newsletter is now issued quarterly, covering:

<i>February</i>	<i>May</i>	<i>August</i>	<i>November</i>
<i>March</i>	<i>June</i>	<i>September</i>	<i>December</i>
<i>April</i>	<i>July</i>	<i>October</i>	<i>January</i>

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