

Local and Essex History Jan/Feb 2023 Challenge

SCIENCE AND INVENTIONS

1. What did Lionel Lukin invent and where did he try his invention out?
2. Dr William Harvey, physician to Charles 1, discovered the circulation of the blood. In the parish church of which Essex village can you find the bust of the good doctor?
3. The inventor Henry Winstanley lived in Littlebury, near Saffron Walden. For which sea-related creation is he most famous?
4. Where is the botanist, William Coys, buried? Where was his home and what was he best known for?
5. A memorial to Chester Moor Hall, inventor of the achromatic lens, can be found in which Essex Church? What is an achromatic lens?
6. E K Cole Ltd of Prittlewell were pioneers in radio and plastics. What was their well-known brand name?
7. The 3rd Baron Rayleigh of Terling was a scientist and Nobel Prize winner who discovered which chemical element?
8. The court physician with an interest in midwifery, who invented a type of forceps, is buried in Woodham Mortimer churchyard. Who is he?
9. The inventor of the London omnibus is buried at St Mary's church in Chigwell. Who is he?
10. For what type of invention is it generally believed that the first patent was granted to an Essex inventor?

SCIENCE & INVENTIONS

1. What did Lionel Lukin invent and where did he try his invention out?

Lionel was born on 18th May 1742 at little Dunmow Essex. He died on February 16th 1834 in Hythe England.

Lionel was a British engineer and a coach builder, while working in London in 1784 he began to experiment with a Norwegian yawl which he tested on the river Thames, which he patented in 1785.

His constructed small boats that didn't sink even when he filled them with water, by using cork and lightweight materials.

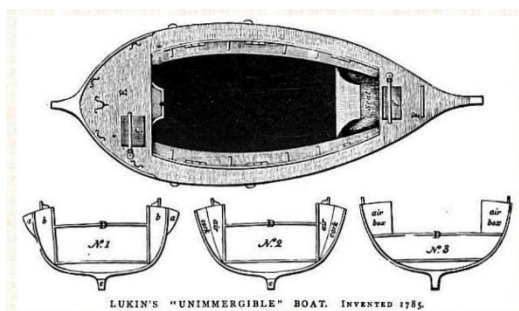
Lionel invented the first lifeboat and also a raft for rescuing people stuck on ice, another invention he made was adjustment reclining bed for hospital patients and a rain gauge.

In 1784 a stain glassed window was unveiled in St Leonard church Hythe in Kent. In August 1940, a German bomb fell close to the church and destroyed the window, but if you walk in the church yard you will find his tombstone and inlaid reads:

'Lionel Lukin was the first person to build a life-boat and was the original inventor of that principle of safety by which many lives and much property has been preserved from Shipwreck and he obtained for the king's patent in the year 1785'.



Lionel Lukin



**Early Plans for the
Prototype Unsinkable Boat**

2. Dr William Harvey, physician to Charles 1, discovered the circulation of the blood. In the parish church of which Essex village can you find the bust of the good doctor?

William Harvey was born in Folkestone on 1st April 1578 and died in Roehampton London on 3rd June 1667. He died of a stroke.

William was a physician to Charles 1 during this time he discovered the circulation of blood in the body.

When William died his body was put in a tomb in the family grave at St Andrews Church Hempstead. In the church displayed is a wall bust of William Harvey.



**Portrait of Dr. William Harvey
&
William's Bust**



**Dr. William Harvey's
Tomb**

Data Source: www.wellcomecollection.org, www.britannica.com

3. The inventor Henry Winstanley lived in Littlebury, near Saffron Walden. For which sea-related creation is he most famous?

Henry Winstanley born 31st March 1644 and died 27th November 1703.

Henry was a painter, engineer and merchant.

Henry constructed the first lighthouse after he lost two ships on Eddystone rocks in Cornwall.

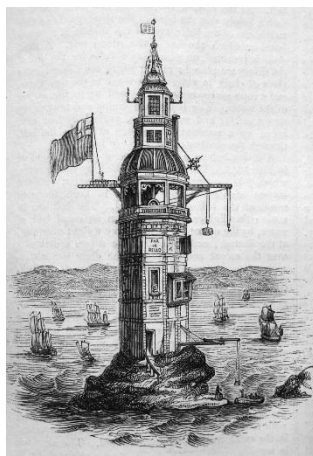
His lighthouse was constructed in 14th July 1696, it was a wooden octagonal tower and Cornish granite. It had a glass lantern room where candles would burn to provide light to passing ships preventing them being ground on the rocks.

In the winter of 1698-1699 the lighthouse suffered some weather damage and the lighthouse was modified.

On 27th November 1703 there was a great storm and Henry visited the lighthouse to carry out repairs, but the tower was entirely destroyed and Henry lost his life.

During the five years that Henry's lighthouse was working no ships were wrecked or lives lost.

This lighthouse was known as the first Eddystone lighthouse.



**Henry Winstanley's
Eddystone Lighthouse**

Data Source: www.wikipedia.org

4. Where is the botanist, William Coys, buried? Where was his home and what was he best known for?

William Coys born in 1560 and died in 1627.

William lived at Stubbers in North Ockendon. He was a famous botanist and cultivated many unusual species of plants in his walled garden and established one of the earliest plant collections recorded in England.

He introduced hops as an ingredient in beer. Other plants William cultivated were Jerusalem artichokes, ivy leaved toadflax and the first flowering yucca in England.

100 years later many of William plants were used to establish Kew Gardens.

William Coys is buried at St. John's, the evangelist church, Havering-atte-Bower.

Data Source: <http://www.tiki-tiki.com>, <http://www.British-history.ac.uk>

5. A memorial to Chester Moor Hall, inventor of the achromatic lens, can be found in which Essex Church? What is an achromatic lens?

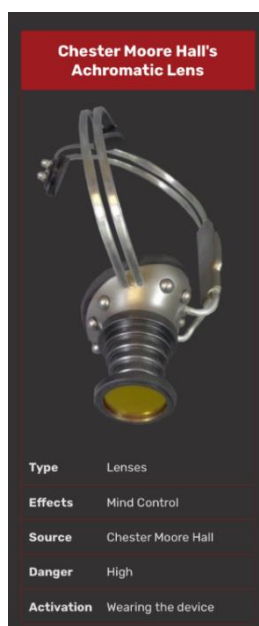
Chester Moor Hall born in Leigh-on-Sea in 1703 and died in 1771 at New Hall, Sutton, Surrey.

Chester was a British lawyer and an inventor, who discovered the first achromatic lens.

As Chester was studying the human eye, he thought the achromatic lens was feasible, so he decided to experiment with different glass and found by combining crown glass and flint glass together met his requirements.

So, the achromatic lens was formed. It was designed to limit effects of chromatic and spherical aberrations; the lens has two wavelengths typically red and blue and these are brought together to form the same focus. This lens can be found in cameras

Chester's monument can be found in Sutton church.



Chester Moore Hall's Achromatic Lens

Data Source: <http://www.leighlives.co.uk>

6. E K Cole Ltd of Prittlewell were pioneers in radio and plastics. What was their well-known brand name?

E.K. Cole Ltd the brand name is EKCO which was formed in 1926 in Prittlewell Essex.

This company began as a result of an early development of work carried out on a high-capacity condenser for early radio sets.

EKCO merged with another company called Pye and continued until 1970 when the ECKO name disappeared from the advertising logo.

Data Source: <https://www.collectionsciencemuseumgroup.org.uk>

7. The 3rd Baron Rayleigh of Terling was a scientist and Nobel Prize winner, who discovered which chemical element?

John William Strutt, 3rd Baron Rayleigh in Terling born 12th November 1842 at Langford Grove Maldon and died 30th June 1919 in Witham, Essex.

He went to Eton for a short time then went to a private school in Wimbledon for three years. After this, he had a short time at Harrow followed by four years at a school in Torquay.

In 1861 John went to Trinity College Cambridgeshire where he studied mathematics, he gained a fellowship at Trinity in 1866 which he held until 1871 when he married.

In 1904 Baron Rayleigh was awarded the Noble Prize for the discovery of Argon gas.

Data Source: www.nobleprize.org, <https://www.britannica.com>

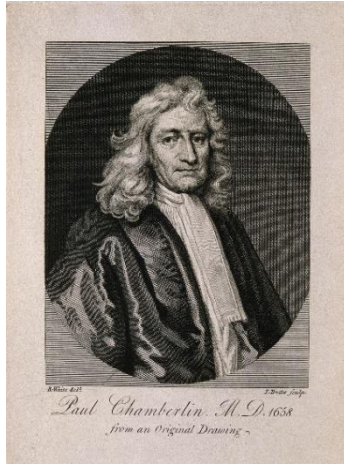
8. A court physician with an interest in midwifery, who invented a type of forceps, is buried in Woodham Mortimer churchyard. Who is he?

Peter Chamberlain the third, born in 1601 and died 1683.

Peter was known as Peter the third and was an English physician and the inventor of the obstetrical forceps.

Peter's forceps were found in 1813 under the trap door in the loft at the hall where he lived. These forceps were passed to the Royal Society of Medicine in 1818.

You can find the tomb of Dr Peter Chamberlain III, in the church yard in Woodham Mortimer.



**Peter Chamberlin M.D. 1794
Engraving
With Incorrect Forename 'Paul'**

Data Source: www.wikipedia.org

9. The inventor of the London omnibus is buried at St Mary's church in Chigwell. Who is he?

George Shillibeer was born in Marylebone in London on 11th August 1797 and died in Brighton on 21st August 1866 at the age of 69.

George was an English coach builder and was famous for designing and constructing the omnibus.

On the 4th July 1829 George's first omnibus went in to service. The carriage held 20 people and was drawn by three horses.

In 1832 the Hackney Carriage monopoly ended and this gave George the chance to run a service to Greenwich in addition to his existing service from London to Brighton.

George Shillibeer defaulted on road taxes and absconded to Boulogne but on his return to London he was sentenced to several months in Fleet prison. Not long after his release the authorities discovered 130 gallons of smuggled French brandy, so back to prison he went.

When George was released again his career took him into undertaking and this is where he developed and patented a new type of funeral carriage.

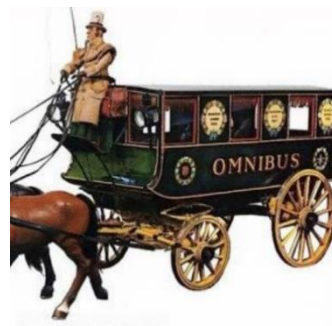
George is buried in Chigwell Essex. In 1929 the busmen of London commissioned a memorial tablet. This is the only commemoration in London for the father of the London bus. It is in Shillibeer place, in Marylebone, near to where he had his depot and stables.

The Memorial Tablet Reads:

**TO THE MEMORY OF
GEORGE SHILLIBEEER
1797 – 1866
INVENTOR OF THE LONDON OMNIBUS
LONG RESIDENT IN THE ANCIENT PARISH OF CHIGWELL
THIS TABLET IS ERECTED BY THE BUSMEN
OF LONDON AS A TOKEN OF RESPECT
FOR THE FOUNDER OF THEIR CALLING AND
APPRECIATION OF HIS PUBLIC-SPIRITED ACTIVITIES
HE WAS A MODEL EMPLOYER AND SERVED HIS DAY
AND GENERATION WELL.
BEHOLD I COME QUICKLY AND MY REWARD IS WITH ME
TO GIVE EVERY MAN ACCORDING AS HIS WORK SHALL BE**



George Shillibeer, circa 1860. He looks a real character. © TfL from the London Transport Museum collection.



**George Shillibeer's
Omnibus**

Data Source: www.wikipedia.org, <https://londonhistorians.wordpress.com>

10. For what type of invention is it generally believed that the first patent was granted to an Essex inventor?

John Kay was a British engineer and inventor, he was born on 16th July 1704 and died in France in 1780.

John invented the flying shuttle which he patented in September 1733.

John went into partnership with Solomon Smith, in Colchester, with his flying shuttle.

Data Source: www.lookandlearn.com, www.historycrunch.com

DENISE PHIPPS

SCIENCE & INVENTIONS

1. Lionel Lukin – Inventor of the Lifeboat

Lionel spent his schooldays in Dunmow before being apprenticed to a local coach maker. Having later flourishing businesses in London's Acre. He became Master of the Worshipful Company of Coach makers.

He was intrigued by the concept of an unsinkable boat. Tradition says he tested models on Doctor's Pond in Dunmow, where a plaque hangs, acknowledging as the inventor of the Lifeboat.

In 1784 he converted a 20ft Norwegian yawl, adding a cork belt projecting from the gunwales covered in a protective sheath. Inside, watertight containers at bow and stern and cork blocks increased buoyancy. To keep upright a cast-iron keel was added.

On November 2nd 1785, Lukin obtained a patent for his invention and approached the Royal Navy, suggesting the design be adopted for ships and boats. There was no positive response, so lent the experiment to a Ramsgate pilot for rough weather testing. He never saw it again, hearing only that it had crossed the Channel several times before being seized in a foreign port by a smuggler.

Undaunted, Lukin constructed the Witch. Although many were impressed with its qualities, there was still no reaction. However, in 1788 Archdeacon John Sharp, trustee of a Northumberland charity, asked him to convert a coble for sea rescue at Bamburgh.

Following the loss of the ship Adventure with all hands at the mouth of the Tyne in 1789, local businessmen offered a two-guinea prize for the best designed life-preserving craft. William would have won, but his entry was considered worthy of one guinea only. Henry Greathead, boatbuilder, was commissioned to construct a boat combining Wouldhave's design with his own. Completed in 1790 Greathead's lifeboat served for 50 years.

Lukin asserted that Greathead's boat was "to all the essential principles of safety, precisely according to my patent. It particularly rankled that Greathead received £1200 from Parliament and the Royal Society of Arts' gold medal and widespread recognition. Lukin had nothing.

However, one of Greathead's lifeboats, at Lowestoft, was disliked by its crew. Whilst visiting Lukin was shown a broad beamed, lug-rigged craft, used for salvage work. Based on this, a forty boat was built in Lowestoft, under Lukin's supervision for the Suffolk Humane Society.

The Frances Ann was launched in November 1807 and performed impressively in adverse weather conditions. This was the first sailing lifeboat to be built and saved 300 lives during its 42 years' service at Lowestoft.

Lukin died on 16th February 1834 and is buried in St.Leonard's churchyard, Hythe, Kent.

[Info: Lifeboat Magazine Archive](#)

2. Dr. William Harvey

The bust of Dr. William Harvey, Physician to Charles 1, can be located in the Church of St.Andrew, Hempstead, Essex.

3. Henry Winstanley

Henry was born in Saffron Walden in 1644. His father was a land steward at Audley End House and probably helped get Henry his first job. He became secretary to Thomas Howard- Earl of Suffolk, owner of Audley End, and remained employed her for a number of years.

Henry married Jane Taylor; they had no children.

Charles II bought Audley End in 1677 and promoted Henry, aged only 25 years, to Clerk of Works. He would have designed features for the garden and repaired areas of the house.

Henry's father, along with other churchwardens of St. Mary's commissioned him to create a new clock and mechanism. His design was elaborate. The clock had hammers which played chimes on eight bells and spheres representing the sun and moon which rose and set each day. Later in the 1680's he created a lantern spire for the top of the tower at the same church. In some ways it resembles a lighthouse with a lantern like wooden frame.

In 1649 Henry and Jane moved to their new home in Littlebury, just outside of Saffron Walden. The house was fondly known as the House of Wonders. It was designed with all sorts of tricks and delights. The public were admitted to see these wonders for an entrance fee to the house.

Henry was still young and fearless when he purchased two boats, both of which floundered on the Eddystone Rock near Plymouth. The boats, their cargo and crew were all sadly lost. When he heard the news, he vowed to put light on the rock to save lives in the future.

Winstanley had little support when he set out to build the lighthouse. Wreckers, as they were known, thought the actions of the sea were Acts of God, so it was their right to benefit from the wreckage and spoils of ships. Charles II and Trinity House recognised the need for a lighthouse but nothing had been done about it. Most builders thought it impossible to build on a rock, with waves crashing all around.

In 1696 Henry found somewhere to stay in Plymouth and gathered a small handful of capable and dedicated men.

Each day they would row out to the Eddystone taking all of their tools and materials with them and then row back again. It was not safe to stay on the rock overnight. Some days it would take 6 hours to make the journey, and some days had to abandon the trip due to weather conditions.

In the first year Winstanley and his team managed to gouge 12 holes into the hard rock, insert iron rods and set them in place with cement. As it was such a slow progress, Winstanley was the subject of ridicule for some time.

On 14th November 1698 Henry himself lit the light in the tower for the first time. The lighthouse did have some teething problems, but Henry was continuously improving and tweaking it. He even rebuilt the top half of it.

Winstanley was building the light house while England was at War with France. He was provided with a war ship for protection – presumably for himself and the construction. One morning the ship did not appear, but a French boat arrived and took him prisoner. The kidnapper took him to Louis XIV hoping for a reward, but the king released him immediately saying that “France is at war with England, not humanity.”

In 1703, after five short years, there was a massive storm. Winstanley and some of his builders had been making some last-minute structural improvements in the hope it would survive the stormy night. The storm became more perilous and Winstanley was stranded. In the early hours of the morning of 27th November vicious winds and waves destroyed the lighthouse. Winstanley perished along with it.

[Info: Tracey Tale](#)

4. William Coys

Botanist William Coys for the first person in England to get the Yucca plant to bloom. He was born in Thaxted and owned the stately home known as Stubbers in North Ockendon.

He established a wall garden at this property. He collected both seeds and plants, both native and exotic, and many of his specimens were sent to Kew Gardens.

He also studied the new art of Beer brewing, and the culture of yeast.

[Info: Wikipedia](#)

5. Chester Moor Hall

Chester Moor Hall was the only son of Jehu Hall and Martha Bittridge. The Halls came from Stepney, but through marriage with the Chesters and Moors of Leigh the came to settle in Leigh, where Chester was born in 1703.

The 18th century produced many technical improvements, not least the microscope, though the image it provided were blurred with colourful haloes around the objects.

Any substance that can bend light (i.e., the glass in a lens) will bend light of different colours by slightly different amounts. The solution to this problem came in 1730's when Chester, barrister, noticed that the newly created Flint Glass seemed to disperse the colours more than the normal Crown Glass did at the same magnification. He decided that if he used a concave lens of Flint Glass right after the Crown Glass, he could pull the different colours back into alignment without losing all of the magnification of the first lens. So, the achromatic lens was born.

Realising the importance of his discovery and to keep it under wraps he contracted two different optical shops to make the two lenses, but unfortunately both shops contracted the work to the same lens maker who put two and two together.

Chester never publicised his invention or took out a patent which 20 year later allowed a John Dolland (Later Dolland and Aitchison) on meeting the lens maker, to create the lens himself and take out a patent.

This caused a stir among telescope makers who now had to pay royalties to Dolland and knowing of Chester's earlier experiments the disputed Dolland's patent rights through the courts. Unfortunately, they lost.

Chester died at New Hall, Sutton, Essex in 1771. His monument in Sutton Church says "He was a judicious lawyer, an able mathematician, a polite scholar, a sincere friend and a magistrate of the strictest integrity.

[Info: Leigh Lives.co.uk](#)

6. E.K. Cole Ltd

E.K. Cole Ltd of Prittlewell were known by their brand name of EKCO. They were pioneers in radio and plastics.

7. Baron Rayleigh of Terling

John William Strutt, third Baron of Rayleigh, was born on November 12th 1842 at Langford Grove, Maldon, Essex.

Throughout his infancy and youth, he suffered ill health and prospects of his reaching maturing seemed unlikely. After a short spell at Eton, aged 10 yrs. mainly spent in the school sanatorium, three years at a private school at Wimbledon, and another short stay at Harrow, he finally spent four years with the Rev. George Townsend Warner who took pupils at Torquay.

In 1861 he entered Trinity College Cambridgeshire, where he read mathematics. At first, not equal to his contemporaries, his abilities soon enabled him to overtake his fellow students.

A severe attack of rheumatic fever in 1872 made him spend the winter in Egypt and Greece. Shortly after his return his father died (1873) and he succeeded to the barony. He now found himself compelled to devote part of his time to the management of his estates. The combination of his general scientific knowledge and agriculture made the management of his estate, in many respects in advance of his time.

In 1876 he left the entire management of the land to his younger brother. From then on, he devoted his time to science again. From 1887 to 1905 he was Professor of Natural Philosophy in the Royal Institution of Great Britain

He served for six years as President of a government committee on Explosives and from 1896 to 1919 he Scientific Advisor to Trinity House. He was Lord Lieutenant of Essex from 1892 to 1901.

He discovered the chemical element, Argon.

In 1871 he married Evelyn, sister of the future Prime Minister, the Earl of Balfour. They had three sons, the eldest of whom became Professor of Physics at Imperial College Science and Technology, London.

[Info: Lord Rayleigh – Biographical](#)

8. Who invented the Forceps instrument

Dr. Peter Chamberlen 1601-1683.

Dr. Peter Chamberlen (known as Peter the Third) was from a family of physicians who tried to bring the profession of midwifery under their control. They are credited with inventing forceps to help in delivering babies.

Peter attended Merchant Taylors School, then Emmanuel College Cambridge, then took a medical degree at the University of Padua. He also degrees at Oxford and Cambridge.

He attended the birth of the future king Charles II. He was appointed Physician to the King in 1661.

In 1638 he acquired Woodham Mortimer Hall, which passed out of the family's possession in 1715. In 1813 his forceps were found under a trap door in the loft of the Hall. They were given to the Royal Society of Medicine in 1818.

[info: Wikipedia](#)

9. George Shillibeer 1797-1866. Inventor of the London Omnibus

Shillibeer's background remains obscure, born in Tottenham Court Road he spent his early career in the navy, attaining the rank of midshipman. He then joined a coach building company in Long Acre. Visiting Paris, he saw their new omnibuses on the street, and immediately returned to London to emulate this. On the 4th July 1829 his first omnibus went into service. These were carriages that could carry 20 passengers, and were drawn by three horses.

Shillibeer's first difficulty was that hackney carriages had an exclusive monopoly on licensing in central London, forcing him to run his route outside the jurisdiction, from Paddington to Islington. The fare was one shilling, not cheap.

His second problem was that competition was immediate, mainly from fifteen passenger vehicles which attracted less tax, which soon led him to bankruptcy, although he still managed to remain operational.

The hackney carriage monopoly ended in 1832, allowing Shillibeer to run a service to Greenwich in addition to his existing London to Brighton service. But by now his problem was not only competition from his many omnibus rivals, but also steam riverboat operators and the new London and Greenwich railway. His omnibuses were still too big for London's narrow streets.

Once again Shillibeer was in default of his road taxes, but this time his property was seized and he absconded to Boulogne with angry creditors in his wake. On his return, the debtors' court sentenced to him to several months in Fleet prison.

He wasn't out long when the authorities discovered 130 gallons of smuggled French brandy in his premises in Camden and back, he went to prison.

Shillibeer spent the rest of his career as an undertaker, but he couldn't get carriages out of his system, developing and patenting a new type of funeral carriage, again modelled on a French idea.

He is buried at St. Mary's Church, Chigwell, where busmen of London commissioned a memorial tablet to him 1929.

The only commemoration in London of the father of the London bus is Shillibeer Place in Marylebone, near where he had his depot and stables.

[Info: Londonhistorians.wordpress.com](http://Londonhistorians.wordpress.com)

10. First patent granted to Essex person

In 1449 King Henry VI granted John of Utynam a Flemish glass maker, through an open letter marked with the Kings Great Seal called a letter patent. This patent gave him a 20-year monopoly to make stained glass. He had a new method, to make glass, not known in England. He made the stained-glass windows for Eton College.

[Info: Historyofinformation.com](http://Historyofinformation.com)

LEE KING

SCIENCE AND INVENTIONS

1. What did Lionel Lukin invent and where did he try his invention out?

Denied credit during his lifetime, Lionel Lukin has since been acknowledged as 'the first who built a Life Boat'. Born 18th May 1742, Lukin spent his schooldays in Dunmow before being apprenticed to a local coachmaker. He later became Master of the Worshipful Company of Coachmakers.

The invention for which he is remembered is the 'immersible boat', forerunner of the lifeboat. Tradition says he tested models on Doctor's Pond, Dunmow and a plaque there acknowledges him as 'inventor of the first unsinkable lifeboat'.

In 1784, Lukin converted a 20ft Norwegian yawl, adding a cork belt, watertight containers at bow and stern, cork blocks to increase buoyancy and a cast-iron keel. The Experiment successfully completed trials on the Thames. Lukin obtained a patent for his invention and approached the Royal Navy, suggesting that the design be adopted for ships' boats. There was no positive response.

He then lent the Experiment to a Ramsgate pilot for rough weather testing. He never saw it again, hearing only that it had crossed the Channel several times before being seized in a foreign port as a smuggler.

Undaunted, Lukin constructed the Witch and although many were impressed by its qualities, there was still no encouraging reaction. However, in 1788 Archdeacon John Sharp, trustee of a Northumberland charity, asked Lukin to convert a coble for sea rescue at Bamburgh. Following the loss of the Adventure with all hands at the mouth of the Tyne in 1789, boatbuilder Henry Greathead was commissioned to construct a boat. Completed in 1790, Greathead's 'lifeboat', The Original, served for 50 years.

More orders followed. In a pamphlet published in 1807, Lukin asserted that Greathead's boat was 'to all the essential principles of safety, precisely according to my patent'. It particularly rankled that Greathead received £1,200 from Parliament, the Royal Society of Art's gold medal and widespread recognition.

However, one of Greathead's lifeboats, at Lowestoft, was disliked by its crew. Under Lukin's supervision, a 40ft boat was built in Lowestoft for the Suffolk Humane Society. The Frances Ann was launched in November 1807 and performed impressively in adverse conditions and saved 300 lives during 42 years' service at Lowestoft.

Lukin died on 16 February 1834 and is buried in St Leonard's churchyard, Hythe. Denied credit during his lifetime, his tomb stands as a monument to 'the builder of the first lifeboat'. Among other accolades, a stamp was issued by the Post Office in 1985, commemorating the bicentenary of Lukin's patent.

2. In which Essex village parish church can you find the bust of Dr William Harvey, physician to Charles I?

Dr William Harvey's bust can be found in The Harvey Chapel, St Andrew's Church, Hempstead.

Around 1650, Eliab Harvey, brother of Doctor Harvey (discoverer of the circulation of the blood) excavated a crypt for the family coffins and built over it a chapel and schoolroom (now the vestry) and shortened and rebuilt the chancel in brick.

In 1883 the Royal College of Physicians removed William Harvey's coffin from the crypt and placed it in a Carrara marble sarcophagus in the Harvey chapel, leaving 49 other members of the family in the crypt.

3. The inventor Henry Winstanley lived in Littlebury, near Saffron Walden. For which sea-related creation is he most famous.

Henry Winstanley was an English painter, engineer and merchant, who constructed the first Eddystone lighthouse after losing two of his ships on the Eddystone rocks. He died while putting the finishing touches to the project during the Great Storm of 1703 when the lighthouse collapsed.

4. Where is the botanist, William Coys buried? Where was his home and what was he best known for?

William Coys, who lived at Stubbers, North Ockenden in the early 17th century, did pioneering work with plants and vegetables. He introduced hops as an ingredient in beer and cultivated exotic crops such as Jerusalem artichoke, ivy-leaved toadflax and the first yucca to flower in England.

5. A memorial to Chester Moor Hall, inventor of the achromatic lens can be found in which Essex Church?

Church of All Saints, Sutton, Rochford.

What is an achromatic lens?

An achromatic lens can be defined as a lens which is made by a combination of two different types of lenses carrying different focal powers in a manner such that the images formed by the light of both the combined lenses are free from chromatic aberration or achromatism (***and I hope that's clearer to you than me!***).

6. E K Cole Ltd of Prittlewell were pioneers in radio and plastics. What was their well-known brand name?

The E K Cole Company was set up as a result of early development work carried out by Eric Kirkham Cole on a high-capacity condenser for early radio sets. The company EKCO as it became known, was formally incorporated as E K Cole Limited in 1926.

The company moved to new premises in Leigh-on-Sea in 1927 and continued to expand moving to a purpose-built factory in Southend in 1930. The financial crisis of 1933 meant recovery of the company took longer than expected. However, things were turned around due to the introduction of Bakelite.

In 1936 the company began to look at the newly emerging television in a joint venture with Schophony Limited. Sales of the Ekco-Schophony television began in the same year. 1939 saw all work on domestic radios and TVs stopped as the company turned over its production capacity to war work. It had already built up a reputation for development work on radar for the Air Ministry. Production of radar related equipment was moved away from Southend, which was viewed as being too close to the coast and enemy action.

After the war the company returned to producing radio sets and televisions, as well as continuing to develop radar for commercial aviation use as well as radar ranging equipment for the Royal Air Force. Work on electrical equipment for the nuclear industry resulted in the company successfully manufacturing the first complete nucleonic instrumentation system for export to Australia, in 1957.

The company had now expanded into most areas of manufacturing involving domestic equipment, from fridges to electric blankets. In 1960 the company merged with Pye, another electronics company, to form a new holding company, British Electronic Industries Ltd. The company was eventually put up for sale in 1966 and in 1967 Philips Electrical Industries became the new owners of the Ekco/Pye business, with the Ekco brand disappearing in the 1970s.



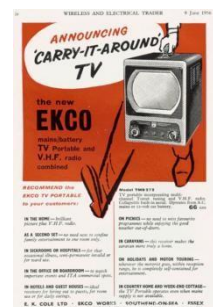
Eric Kirkham Cole



Bakelite Radio



Premises in Priory Crescent



7. The 3rd Baron Rayleigh of Terling was a scientist and Nobel Prize winner who discovered which chemical element?

John William Strutt, 3rd Baron Rayleigh, (Born 12 Nov 1842, Langford Grove, Maldon, died 30 June, 1919, Terling Place, Witham, Essex), was an English Physicist. In 1873 he succeeded to his father's title and built a research laboratory on his estate. He taught physics at Cambridge University (1879–84) and was secretary of the Royal Society (1884–95). In 1904 he was awarded the Nobel Prize for Physics for his isolation of argon. In 1908 he became chancellor of Cambridge University.

8. A court physician with an interest in midwifery, who invented a type of forceps is buried in Woodham Mortimer churchyard. Who is he?

Peter Chamberlen was born on the 8 May 1601 in the Parish of St. Anne, Blackfriars and was brought up surrounded by medical practice and religious study. He came from a family of Huguenot refugees who had migrated to England in the mid-16th Century. Many of the family were surgeons, physicians, accoucheurs (midwives) and apothecaries.

He is credited with the invention of the obstetric forceps. Although he held a prominent position at Court as a physician, his work was often among the poor where he was able to observe their plight. He was genuine in his attempts to stem infant mortality but, because of his uncompromising approach and foreign heritage, he failed to gather the necessary support from among his peers.

Soon after his uncle (known as Peter Chamberlen the Elder) died in 1631 he was appointed as Physician Extraordinary to the King (a position with no paid salary). He was the physician midwife at the birth of Charles II.



***Tomb of Dr Peter Chamberlen
St Margaret's Church,
Woodham, Mortimer, Essex***

He died aged 81-82 in his house, The Hall at Woodham Mortimer and is buried in the nearby St Margaret's Churchyard. In 1843 four pairs of forceps were discovered hidden beneath a trapdoor in an attic room of the Hall. It is likely these had been secreted there by Peter's widow.

9. The inventor of the London omnibus is buried at St Mary's Church in Chigwell. Who is he?

The coachbuilder George Shillibeer began his service from Paddington to Bank in 1829. He called his service Omnibus (meaning 'for all' in Latin). He gave us the abbreviation 'bus', now an internationally recognised term.

In 1979, the 150th anniversary of the commencement of the first omnibus service in London, several London buses (twelve AEC Routemasters and one Leyland Fleetline) were operated in a green and yellow livery similar to Shillibeer's Omnibus. These specially painted vehicles were displayed for their launch into service at the Guildhall in central London on 2 March 1979. A memorial service was held at the Chigwell Church attended by Queen Elizabeth the Queen Mother.

10. For what type of invention is it generally believed that the first patent was granted to an Essex Inventor.

Found this very difficult to research, as patents were being awarded from the mid 1400's (the first patent in England was 1449). However, the Patent Office opened in 1858 so **Thomas Churchman Darby's patent for a horse hoe in 1858** could be the first? He had a small works and smithy in Pleshey and went on to design the Darby Steam Digger in 1877.

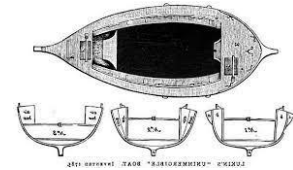
*Acknowledgements to the following websites: Science Museum
Britannica
The Huguenots of Spitafields London Transport Museum
Grace's Guide to British Industrial History*

Mavis Regan

SCIENCE AND INVENTIONS

1. Lionel Lukin

Lionel was born on 18th May 1742 in Little Dunmow, Essex and died on 16th February 1834 in Hythe, Kent. He became interested in the idea of an unsinkable boat and was a pioneer in the construction of the modern, unsinkable boat.



There is a plaque at Doctor's Pond, Dunmow where he is believed to have tested his models. The plaque acknowledges him as the inventor of the first unsinkable lifeboat.

2. Dr William Harvey



Dr William Harvey was born on 1st April 1578 in Folkestone, Kent and died on 3rd June 1657. He was Charles I's physician and was the first to recognise the full circulation of blood in the human body. His bust can be found in St Andrew's Church, Hemstead, Essex where he was buried.

3. Henry Winstanley

Henry Winstanley was born in Saffron Walden on 31st March 1644 and died on 27th November 1703. He was an English painter, engineer and merchant, who built the first Eddystone lighthouse after losing two of his ships on the Eddystone rocks. He died while working on the project during the Great Storm of 1703.



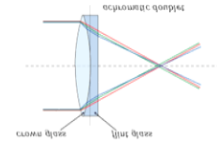
4. Henry Coys



In the early 17th century Stubbers was the home of William Coys, a well-known botanist. He established a walled garden that subsequently provided plants for the establishment of Kew Gardens. The garden contained 342 plant species and in 1604 a yucca plant bloomed there, for the first time in England. He also grew rare plants such as Ivy Leaf Toadflax and the Jerusalem Artichoke. He is buried near the chapel of St Mary Magdalene in North Ockendon.

5. Chester Moor Hall

Chester Moor Hall invented the achromatic lens which is a lens made by combining two different types of lenses which carry different focal powers. He was also known to have made the first twin colour corrected lens. He was born in 1703 in Leigh, Essex and died in 1771 in Sutton, Surrey. His memorial can be found in the Church of All Saints, Sutton, Essex.



6. E.K.Cole Ltd



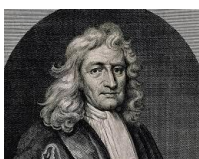
E.K.Cole Ltd was founded by Eric Kirkham Cole who was born on 4th July 1901 at Prittlewell, Essex. He was educated at Southend Day Technical School and did a three-year apprenticeship. Cole and his future wife Muriel Bradshaw began making radio sets in 1924. The brand name for Eric Kirkham Cole Limited (E.K. Cole Ltd) is EKCO.

7. Baron Rayleigh of Terling

Baron Rayleigh of Terling was born on 12th November 1842. He was a sickly boy, so his schooling was often interrupted. In spite of this he graduated first in his year at Cambridge. In 1904 he received the Nobel Prize for Physics for the discovery of argon.



8. Dr Peter Chamberlen



Dr Peter Chamberlen was the eldest son of Peter Chamberlen the younger. Like the rest of his family, he worked in medicine and midwifery. He attended Merchant Taylors' School, then Emmanuel College, Cambridge, and took a medical degree at the University of Padua in 1619. The latter led to his being admitted to degrees at Oxford and Cambridge. He attended the birth of the future King Charles II and invented a type of forceps. He was born in 1601 and died at the grand old age of 82 in 1683 and is buried in Woodham Mortimer Churchyard.

9. George Shillibeer

George Shillibeer was born in 1797 and died in 1866. He was buried at St Mary's Church, Chigwell. He was a coach builder and in the 1820s he was offered work in Paris, France. While there he was asked to build some unusually large horse-drawn coaches of "novel design". The idea was to design a coach which could be used to carry a large number of people from place to place. Shillibeer decided that similar vehicles could be used in London and that if people were charged a fare on them, it could make money. He returned to London and his first London Omnibus took up service on 4th July 1829.



Data Sources:
britannica,
bing.co,
wikipedia,

PAULINE HARRINGTON

Local and Essex History Jan/Feb 2023 Challenge
SCIENCE AND INVENTIONS

10. For what type of invention is it generally believed that the first patent was granted to an Essex inventor?

An excellent set of answers from everyone. The final question about the first patent granted to an Essex Inventor caused lots of heads to be scratched!

There is, I think, no one correct answer as this will vary according to how you define the granting of a patent.

However my source suggests the answer to be:

Heckford of Halstead, a man more usually associated with the cloth trade, who had a patent granted for "sails or vanes to go the horizontal way" on a windmill in 1684.

MARION COLEMAN