Heart of England U3A Stratford-upon-Avon
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Issue 38

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January to March Quarter 2023 Magazine

Welcome to the January to March 2023 edition of our Magazine. This issue runs from 1st January to 31st March 2023.

Reports include:

- January 2023 General Meeting
  Roger Browne played and sang his way through some of the Great American Songbook
- January SNATTs meeting
  Tim Barney on 50 Innovations that shaped warfare. Very interesting
- Odds & Ends of Photographs.
  Photographs from various Groups but no report or very short reports.
- New Year Lunch, Thursday 12th January 2023 See general view of dining area with photographs of each table in the report. About 60 members sat down to a very pleasant lunch with plenty of conversation and a minimum of speeches and congratulations.
- February Meeting—Warwickshire Ghost Stories by Margot McCleary.
- February SNATTs meeting
  Colin Stewart talking about HS1
- March Monthly Meeting - Roger Gowland, Graham Robson and Phil Hickson appearing The Brummagem Pals reminiscing about their service in WW1
- March SNATTs meeting .

  Frances Freeman talking about her career as an Opthamologist.

Last update: 14th March 2023

General view of New Year Lunch held at the Sports Club on Thursday 12th January 2023

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The January Meeting
Thursday 5th January 2023
Held at Stratford-upon-Avon Methodist Church Hall
The Great American Songbook—Roger Browne

Our Speaker Secretary, Cindy, introduced Roger who had travelled down from Stockport in Cheshire, to give a musical talk about the songs from the Great American Songbook. This illustrated songs from about 1880 through to the present day.

Roger started by explaining how he came to music through local talent shows. He had started learning music and the piano at an early age and learned mostly music and songs that were popular when he was young. The American music was very popular then. He took us on a journey through the great American composers and singers such as Jerome K Jerome, Richard Rogers, Irving Berlin, George Gershwiin, and others.

He went from Jazz to Ragtime to musical theatre. These were all based on classical music and were very structured.

His playing and singing was a delight and drew much applause from the audience. I am sure that a repeat performance will be expected. Cindy was very please with how the afternoon went.

Members of the u3a watching and taking part in the meeting

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Science, Nature and All Things Technical Group Meeting

Friday 13th January 2023

Evolution of Warfare — Part 1

Tim Barney

This was a late change as Ian Roberts was due to give a talk on the Science of Michelangelo. Tim Barney was due to give his talk on Developments in War Technology last September, but had to cancel as he was hospitalised for cancer treatment. He is due to undergo chemotherapy next month so now was a good time for him to give the first part of his talk. He will give the second part later in the year. Ian's talk will take place later during the year.

Tim's subject could be called the development of War Technology in 100 good ideas. This first part is from the year dot to the early 1860s in 50 inventions.

1. Fabricated weapons. These appeared during the stone age when simple clubs consisting of a fallen branch, perhaps, was picked up and used as a weapon. This developed through stone axe heads fitted to a wooden handle through to swords and spear fabricated from bronze and , later, iron. Fighting and war has always been with us, starting with fights over territorial rights for hunting, living, and later agriculture.
2. Bow and Arrow. These appear to have developed in antiquity and were a means of fighting from a distance. These led on to other types of projectile delivery systems, such as the cross bow which were easier to use by unskilled fighters. During the Roman period types of artillery were developed firing much bigger and heavier arrow types. (see later)
3. Personal Armour. Developed during antiquity for personal protection during fighting. Includes use of padded clothing, leather and then metal armour.
4. Infantry Phalanx 2500 BC
These were introduced very early to make use of more fighters in a mass formation to achieve a victory. They were used by the ancient Greeks in their wars between city states and have continued to be used up to fairly modern times in various ways.
5. Horse drawn chariots 1700 BC
These were invented by the Hyksos, opponents of the ancient Egyptians. Their use spread across the known world later.
6. Cavalry Mounted soldiers 1000BC
originated about 1000BC in the steppes of Asia probably by the Assyrians. At first the mounted soldiers rode bareback or almost. Gradually over time saddles were introduced and other bits of harness necessary to control the horse.
7. Standing Army About 750BC
The Assyrians under Tiglath-Pileser III are believed to have formed the

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Evolution of Warfare — Part 1 by Tim Barney
(Continued)

first standing army. Later, the city state of Sparta in Greece also formed a standing army in the 6th century BC.

8. Trireme About 7th Century BC
Ships developed rapidly in the Mediterranean during the Bronze Age, particularly during the Persian Wars. Development continued with the introduction of 4 and 5 deck warships (quadriremes and quinqueremes) .

9. Roman Military System About 500 BC
The Roman Army continually evolved from the time of the Kingdom of Rome through the Republic in (start date 509 BC.) until the end of the Western Roman Empire in 476 AD. It went from an annual levy for the summer campaigning season to a standing army comprised of Legions (heavy infantry, well trained and equipped) plus Auxiliaries (mostly recruited from subject nations, not so heavily armoured and often with a variety of weapons particular to the nationality of the soldiers— archers, slingshot fighters, light cavalry. The Legions were usually stationed around the borders of the Empire.

10. Stirrups About 200 AD
The stirrup was probably invented in China and spread across Asia via the nomadic tribes. It was unknown during the Roman Empire period and was introduced to Europe by nomadic tribes such as the Visigoths and Huns. The use of stirrups greatly improved the effectiveness of cavalry.

11. Feudal System About 500 AD
Following the breakdown of the Roman Empire in 476 society became organised around Kings or other minor lords. Some lords or kings became strong enough to control whole countries and society was organised along feudal lines where the local lord paid homage to a higher lord or King. In England King William 1 was arguably the first feudal king. His court was made up of Barons who were allowed their own armies or retainers to control areas or counties of the country.

12. Crossbow Asia 700 BC
Europe 100 AD
The crossbow was a simple ranged weapon that did not require prodigious strength to operate as did the longbow.

13. Mercenary companies About 300 BC
Mercenary soldiers appeared as early as 300 BC fighting for Carthage in the Punic Wars with Rome, but may have originated earlier. Their use enabled smaller nations/kingdoms to field a larger army if they had the financial resources to buy in the services of mercenaries.

14. International Banking System.1300 AD

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May be even earlier—perhaps as early as Assyria of about 5000 BC. Modern banking started in the rich cities of Italy (Florence, Genoa, etc).

15. Infantry square 100 BC
The first recorded use of an infantry square as a protection against cavalry attack was at the Battle of Carrhae in 53 BC between the Roman Republic and the Parthian Empire. It has been used in many conflicts since, particularly during the Napoleonic Wars of the early 19th Century.

16. Longbow Ancient Stone Age England 1100 AD
Longbows were often made from yew but could be made from other woods (wych elm for instance) and even from a mixture of woods and bone. English longbows of the Middle Ages (1100 to 1600) were made from yew and were about 6 foot long. They required immense strength in the bowman to be accurate and effective. Laws were passed to insist on regular practice for most English men. The longbows were particularly effective during the 100 years war at the battles of Crecy (1346), Poitiers (1356) and Agincourt (1415). The use of firearms reduced and eliminated the use of longbows in warfare,

17. Gunpowder. China 9th Cent AD
Gun powder appears to have originated in China during the 9th century AD. It transferred to the Islamic world about 1250 and Roger Bacon in Europe was writing about it in 1267. Its use in cannon revolutionised warfare in Europe during the middle ages

18. Corning Late 14th Century
This was a method of improving the quality and performance of gunpowder. A wet grinding; liquid, such as distilled spirits, was added during the grinding-together of the ingredients and the moist paste dried afterwards.

19. Carrack 14th Century
The carrack was the precursor of the galleon, a warship of simi lar rigging that was built with less cumbersome fore- and stern-castles and a greater length relative to beam.

The Portuguese are said to have devel oped the carrack for use in exploring the world, which they excelled in dur ing the 14th and 15th centuries.

20. Matchlock Mechanism. About 1465
The matchlock mechanism automated the firing of a musket or cannon and was safer than hand applied matches.

21. Field Artillery About 1500
Early artillery comprised very heavy cannon used against castles and other fortifications.. As metallurgy improved lighter weight cannon could be produced which could be used on the bat-

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tlefield. The combination of large diameter wheels on lightweight cannon by Napoleon enabled mobile field artillery to be deployed and moved around the battlefield.

22. Spanish Square (Tercio) About 1500This was a combination of pikes, arquebus and musket which proved very effective for the Spanish armies in Europe.

23. Bastion Fort About 1500
These were a development of fortresses to make them resistant to cannon fire. They were lower than medieval forts and with sloping walls. The cannon balls in use were able to bounce up from the sloping walls and pass over the bastion fort without doing significant damage.

24. Wheellock mechanism 1500—1600
These were developed during the 16th century. A steel wheel is rotated against a piece of flint or pyrite to produce a spark which would ignite a small quantity of fine gun powder which would ignite the main charge of a gun in its barrel. A small hole in the barrel enabled the spark to pass from the mechanism through the barrel wall to the charge in the barrel.

25. Naval warfare—The Galleon - 1570.
This was a wooden warship with several decks and high castle-like structures fore and aft. It was ideal for the use of the new gunpowder cannon and small arms.

26. Land warfare. The rise of the regiment.— 1640
this was moving from an army recruited just for a campaign or battle to a standing army of trained soldiers and officers with a command structure, bespoke uniforms, barracks, military law, marching sequences for the battlefield.

27. Flintlock mechanism for muskets and cannon. 1650
it also brought in musket & cannon balls with a loose fit in the barrel (to make loading easier and quicker on the battlefield. It meant accurate firing was not possible.

28. Infantry line 1650
Volley firing was introduced which formalised battlefield.

29. Nation State Europe 1700
Leading countries were England and France. Nation State is a more precise name for a political unit where the state and nation are congruent.

30. Socket Bayonet 1700
The socket bayonet replaced the earlier plug bayonet which was fitted into the uzzle of the musket. Use of the socket attachment and an offset blade enable the musketeer to reload and

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fire whilst the bayonet was still attached. The infantry square became more effective as pike or pikemen were no longer needed with the musket and attached bayonet were just as effective.

31. Horse Artillery 1760
A very effective addition to the battlefield, reinforcing both cavalry and infantry. The lightweight cannon were very easily and rapidly deployed . They were in use in Europe from about 1700 to about 1914. Subsequently, the use of extended trench systems reduced their effectiveness and closed down the battlefields to static warfare until the advent of motorised and armoured units.

32. General Staff 1720
The leader of the army is usually General who works with a staff of other officers to decide strategy and tactics and to communicate orders to all the battle units—regiments, infantry, cavaly, artillery, supply chains—to control the course of the battle and bring it to a successful conclusion.

33. Divisional Organisation About 1700
Just before and during the French Revolution countries began to divide armies into Divisions (a Division being several Regiments combining all necessary fighting units (infantry, cavalry, artillery, supply chain,) to fight a battle. This simplified organisation on the battlefield.

34. National Conscription 1800
Many nations have used conscription in one form or another to fill their armies and other military units at various times. With all out war during the 20th century this was the preferred method of ensuring enough manpower to fight such a war.

35. Shrapnel Shell About 1800
This was a development of the Canister Shot used in cannon during the 18th century. It was more effective at longer ranges than Canister.

36. Mass produced weapons 1805
The Anglo-French wars with Buonaparte provided the impetus to improve and streamline the manufacture of small arms weapons. Later during the 1840, Samuel Colt in the USA developed the mass production of revolvers using machine tools instead of hand crafting and an assembly line method of working. This reduced the price of the guns and also enable the supply of spare parts that could be fitted by relatively unskilled workers because the accuracy of manufacture made the spare parts usable. It was not quite that simple, but the manufacture of small arms and larger weapons has benefitted from the developments ever since.

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37. Canned Food 1810
One of the major problems in military campaigns is the supply of food to the troops during manoeuvres. Various methods of food preservation had been tried over the centuries, with variable results. Drying, smoking, salting had all been used. The French military offered a large reward to anyone who could provide a method of preserving food for extended periods and which could be used on a large scale and allow easy transport to the battlefield. Nicolas Apert, a French confectioner and brewer, developed a method of sealing food into glass jars. He was awarded the prize in 1810. The French Army were unable to develop the system on a large scale during the Napoleonic Wars but other countries continued to develop the process, including the introduction of tin cans. The process was in use for sea voyages in particular by the 1820s.

38. Steam Paddle Warship 1827
Early steam warships were quite small and had limited armaments. The steam engine and coal supplies occupied the centre of the ship so the ship could not carry a full broadside. The first steam warship is considered the US Navy Demelogos launched in 1815. The British Navy were trialling a couple of armed tugs during the 1820s—HMS Comet and HMS Monkey. Steam power continued to develop, gradually improving in power, range and armament.

39. Percussion Cap 1836
The **percussion cap** is a small cylinder of copper or brass with one closed end. Inside the closed end is a small amount of a shock-sensitive explosive material such as mercuric fulminate (discovered in 1800; it was the only practical detonator used from about 1850 to the early 20th century). This was a crucial development for small arms (revolvers, rifles, etc) and also for cannon. It was a water resistant design, unlike the earlier matchlock and flintlock designs.

40. Screw Propeller Steamship 1845
The screw propeller propulsion unit for steamships was far superior to the paddle steamers. All passenger vessels, freight vessels and Naval warships came to rely upon the screw propeller, as do most modern ships.

41. Steam Railways 1846
These were put to use by armies all over the world for transporting troops, munitions, weapons and stores.

42. Rifled Muzzle Loader guns. 1851
These came into general use, replacing muskets. They were a bit slower to load but far more accurate over longer distances.

43. Breech Loading Rifles 1852
These were a vast improvement over

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muzzle loading rifles. A good rifleman could shoot 10 shots a minute against perhaps 2 shots for a muzzle loader.

44. Assembly line production 1853
This followed Samuel Colt's innovations in his revolver factory. Weapon production became cheaper and quicker, and spare parts could be procured with a good expectation that they would fit.

45. Electric Telegraph 1854
The telegraph greatly improved the speed of communications around the battlefield and, eventually , around the world.

46. Naval Mine 1855
The naval mine was a floating explosive device and could be laid in large quantities in shipping lanes and around port entrances. Areas of the seas could be defended against encroachment by enemy vessels.

47. Lever Escapement for clocks and watches 1855
With this device it was possible to produce clocks and watches that were very accurate. This lead on to the Naval chronometer with which an accurate knowledge of longitude could be kept by a skilled navigator.

48. Breech Loading Rifled Artillery 1858
The use of the earlier mentioned percussion cap enabled artillery to be produced that could be rifled and breech loading. This improved accuracy and speed of fire. Ships' armaments improved very quickly, enabling very large bore ships' guns—8", 10" 12" and bigger.

49. Iron clad warships 1859
Naval vessels began to be built with iron cladding over the wooden structure. These proved very effective and more were built during the later 19th century.

50. Metal Cartridge Cases 1862
These replaced paper cartridges and improved reliability. Metal cartridges were much more resistant against damp or wet conditions.

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Odds & End Page

Various photographs will be posted on this page when Groups submit such photographs without an accompanying report.

Above: Dinahs Christmas Lunch in December 2022 at the Red Lion Pub.

Below: Play Reading Group in January 2023

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Odds & End Page

⇧ : Monday Book Group in January 2023

⇩ : The Walking Group had an excellent walk around Pillerton Priors and Pillerton Hersey on a cold, frosty morning in February. The countryside was beautiful in the bright winter sunshine. The photograph was taken outside Pillerton Hersey Church during a brief coffee stop. There were flowers to be seen— crocuses, snowdrops and a carpet of aconites in the churchyard as well as birds, ponies, sheep and some white geese in the fields en route.

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The New Year Lunch
Thursday 12th January 2023
Stratford-upon-Avon Sports Club

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The New Year Lunch
Thursday 12th January 2023
Stratford-upon-Avon Sports Club

Above: The top table with our Chair and other leading members of our U3A.

Another view of the dining room with all the tables .

About 60 members attended.

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The February Meeting
Thursday 2nd February 2023
Held at Stratford-upon-Avon Methodist Church Hall
Warwickshire Ghost Stories—Margot McCleary

Margot, pictured right, began her talk by saying that Warwickshire had many tales of ghosts to be seen occasionally in many towns and villages and illustrated a couple for the audience.

Joe Marklow lived in Inkberrow, depended on charity and smoked a foul smelling old clay pipe. He was the butt of a joke by Sally Spencer, a barmaid, and her friends. She pretended to want to marry him and even named the day. On the appointed day Joe was waiting by the church but Sally did not appear until towards evening when she taunted him about the joke. Next day he was found hanging in a local barn. He was buried by the local crossroad since a suicide could not be buried in the churchyard. Even now, people are wary at the crossroads and say hello to Joe as they pass by, not wishing to upset his ghost.

Clopton House on the edge of Stratford is said to be haunted by the ghosts of daughters of a rich catholic family from the 16th century. Margaret Clopton threw herself down the well and drowned after learningthat her betrothed had eloped with another girl. Sound of a woman's voice are said to come from the well. Her sister was kidnapped and held for ransom. When the family failed to pay the ransom she was killed and deposited in the River Avon. Another sister, Charlotte was struck by a 'sweating sickness'. She was laid to rest in the chapel vaults. Later, another family member died and was laid to rest in the family vault.

To the horror of the mourners, Charlotte's remains had moved. She was leaning against the doorway to the vault in a vain attempt to escape her tomb. Her family had unwittingly buried her alive.

There were other storirs of ghostly appearances the she related. Also , she elicited a couple of sightings of ghost by members of the audience that had the members of the audience on the edge of their seats.

Altogether, a very entertaining tale of great interest to the u3a members.

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Science, Nature and All Things Technical Meeting
Friday 10th February 2023
Held at Stratford-upon-Avon Methodist Church Hall
'HS1, Eurostar, Eurotunnel & St Pancras Station.'
Illustrated talk by Colin Stewart

Colin gave a brilliant illustrated talk about the origins and building of the high speed railway connection between European stations and London, using the Channel Tunnel and a variety of track and stations to achieve a high speed link. He used a mixture of video footage, still photographs and charts to put over the often complex facts about company organisation, source of funds and how the whole enterprise was managed.

I*n the years since WW2 the continental railways had been building miles of new track capable of trains running at 300 km/hour and higher, all electrically powered by 25,000 volt A/C overhead wiring. Britain, in contrast, was quite slow about erecting the overhead wiring with the result that only some main routes were so wired and reliance was on diesel power over much of the network.

In 1986 the British and French governments agreed to build a tunnel under the English Channel, to be financed by a consortium of British and French corporations and banks. Digging began in 1987—1988 on both sides of the Straits of Dover and was completed in 1991. The tunnel was officially opened on May 6th 1994.

After the Channel Tunnel was opened in May 1994 the rail route from the tunnel to London had to run on existing tracks through Kent with a maximum speed limit of 160 km/h (100 mph) to London Waterloo International. The Channel Tunnel Act 1987 made government funding for a Channel Tunnel rail link unlawful.

To rectify this problem Parliament authorised a new route with the Channel Tunnel Rail Link Act 1996 which was later amended by the Channel Tunnel Rail Link (Supplementary Provisions) Act 2008. The new rail link was financed through a consortium of companies including banks, rail operating companies and energy companies.

The rout was be a new route from Folkstone

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HS1, Eurostar, Eurotunnel & St Pancras Station
Illustrated talk by Colin Stewart

through Ashford going north parallel to the M2 motorway but with a straighter line, going under the Thames at Ebbsfleet and circling London to the northeast, mostly in a tunnel, and ending at St Pancras Station. The station at St Pancras was renovated with much of the WW2 damage to the roof repaired, .The lower ground area which used to be storage for beer barrels for the beer trade from Burton-upon-Trent into London has been transformed into retail areas and passenger arrival and processing. There is a dedicated, security-sealed terminal area for Eurostar trains. A new extension doubled the length of the central platforms and platforms have been provided for existing domestic East Midlands Trains.

The line was opened in two sections:

Section 1	from Folkestone to just south of Ebbsfleet International Station
Section 2	Northern section to St Pancras International Station.

Ownership:

In November 2010, The HS1 concession was awarded for a duration of 30 years to an investment consortium bringing together two Canadian public pension funds: Ontario Municipal Employees Retirement System (through its subsidiary Borealis Infrastructure), and Ontario Teachers' Pension Plan. At the time, UK pension investors had generally limited interest in such long-term illiquid, infrastructure assets.

In 2017 the sale of HS1 was announced to funds advised and managed by Infrared Capital Partners and Equitix Investment Management; participants include HICL Infrastructure and South Korea National Pension Service. The private operator does not hold the freehold or rights to any of the associated land.

The railway is operated on an open access basis. Trains are operated by several ,organisations all operating over the same track. HS1 Ltd is the network manager for the line, stations and other infrastructure.

A book by Nicholas Faith—The Right Line—gives more information about the struggle to adopt the best line for the railway, particularly in its approach to London.. Published in 2007 by Awesome Books.

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Monthly Meeting - Thursday 2nd March 2023
'Humour for all'
Graham Robson, Roger Gowland and Phil Hickson

Graham Robson and Roger Gowland returned to entertain us again and were joined by a third Brummagem Pal, Phil Hickson. Together they posed as old pals from the First World War meeting for an annual reunion and sit to share some beer (mock beer only as no alcohol was consumed) and reminisce about the old times.

They entertained us with a mixture of funny reminiscences, poems, funny songs similar to ones from the WW1 period and militaristic speeches.

Roger and Graham have entertained us on previous occasions. They have both been involved in local amateur dramatics for well over 50 years. Phil has also been involved with local amateur dramatics for many years.

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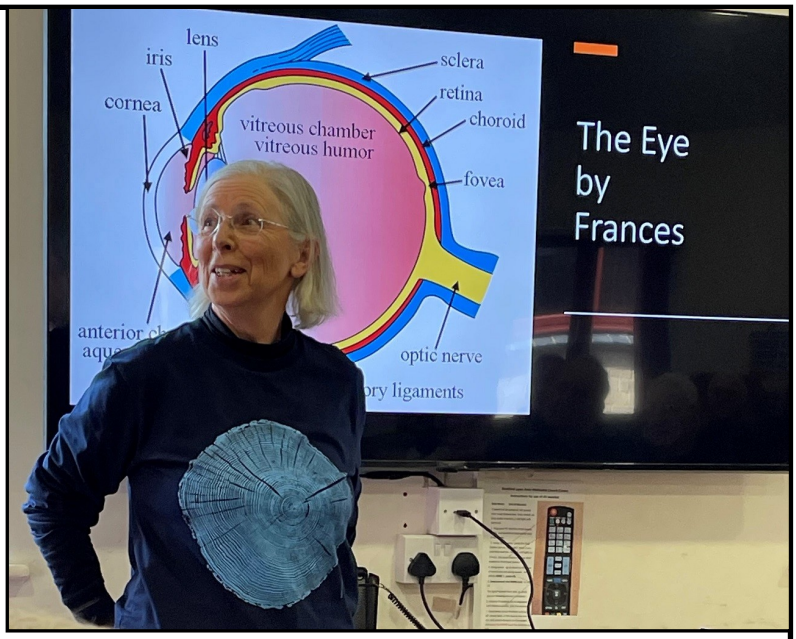
Science, Nature and All Things Technical Group Meeting
Friday 10th March 2023
'The Human Eye—Intraocular Lens Implant -
1. Inspiration and Development
Frances Freeman

Frances gave us a very interesting and lively talk about the human eye, its structure, make up and its many possible defects and possibilities for the optician and surgeon to remedy many of the defects.



Frances trained as an **Opthalmologist**.

Opthalmologist: To become an ophthalmologist, a person needs to graduate from medical school. Ophthalmologists will have at least 8 years of medical training.

- They go to medical school for 4 years, and if they qualify for ophthalmology as a specialty, they then have 4 years of residency training. They may also complete 1-2 additional years of subspecialty fellowship training.
  Ophthalmologists are licensed to treat eye diseases and perform surgery. An ophthalmologist can offer the same refractive services as an optometrist, including prescribing and fitting eyeglasses and contact lenses to correct visiosues.

Ophthalmologists can also:

- diagnose and treat eye conditions
- perform eye surgeries
- conduct scientific research into the causes and cures for eye conditions and vision issues

Frances trained at Moorfields Eye Hospital in London and has worked at many hospitals around the country in a long career. She was able to explain a lot about the eye conditions she has come across and dealt with. These include cataracts and glaucoma