

3rd April

Memory verse for the week:

The heavens declare the glory of God;

and the firmament sheweth his handywork. Psalm 19:1

More about this verse in tomorrow's lesson.

All the saints, because of sin, are like old rusty horologues, that must be taken down, and the wheels scoured and mended, and set up again in better case than before. Sin hath rusted both soul and body. Our dear Lord by death taketh us down to scour the wheels of both, and to purge us perfectly from the root and remainder of sin. And we shall be set up in better case than before.



Samuel Rutherford to Lady Gaitgirth 7 Sept 1637¹

We learned about Samuel Rutherford and his letters in the lesson for 7th March. But what is an horologue? Can you guess? Read today's lesson to find out! But first...

Something to read from history²

Edward the Confessor³ (1042–1066)⁴, the last Anglo-Saxon king of England was crowned in Winchester Abbey on 3rd April 1042. He was not a man suited to the throne of England. He had been brought up in Normandy⁵ and had spent most of his life in monasteries. There was still a difference between the church life of the continent and that of England. For instance, when he arrived back in England as king, Edward found that here the clergy⁶ were often married unlike those on the continent who were forbidden to marry.



The Norman dukes gave much money to the church and Normandy was full of very beautiful churches and cathedrals. In return the dukes had the power to appoint bishops and abbots. This meant that the church leaders were like servants of the dukes and helped them carry out their policies. This was the system under which Edward had been brought up.

Why was Edward crowned at Winchester? Aren't English kings usually crowned at Westminster Abbey?⁷ The answer is that before Edward the Confessor's time there was no magnificent Abbey at Westminster! It was Edward who had the Abbey built (or rebuilt) at Westminster and you can read about it in the lessons for 29th June. Edward preferred the grand church buildings of Normandy to the simpler ones of England. When he began work on Westminster Abbey he moved from the city of London to be nearer the building work. The city of London had by this time become a thriving centre of trade. Throughout its later history, London often acted independently from the monarch.

¹ *Letters of Samuel Rutherford* Banner of Truth Trust 1973 p. 138

² Adapted from *The Story of God's Dealings with our Nation* Volume 1 which is available here: <https://www.creationresearchstore.com/s/search?q=Dealings> .

³ Edward was given the title after his death by the pope. It means “priest” and was conferred on him because of his life of devotion to the Roman Church.

⁴ These are the dates of his reign, not of his life.

⁵ Normandy is part of France. The Dukes of Normandy owed allegiance to the kings of France but in practice they were so strong that they were virtually independent rulers.

⁶ Clergy means ministers and officials of the church.

⁷ More about coronations in the lessons for May 12th and 10th October. If you missed the lesson for 27th February we had another coronation then too!

Edward's move from London was a first step in this political independence⁸ of the city. Edward was a weak person, afraid of offending his Anglo-Saxon nobles so he did not force on them a thorough change of the church to bring it into line with the Roman ideas he had been used to in Normandy.

The most powerful noble in the land at this time was the Saxon Earl Godwin. He was so powerful that Edward put Normans rather than Englishmen into high places both in church and state to check the Earl's power. The English disliked the Normans and when Edward had Earl Godwin and his son thrown out of the country, the people rose up to fight for him and his son Harold. Edward was forced to allow them to return. Edward had had an agreement with the Welsh King, Gruffydd ap Llywelyn. However, Harold persuaded Edward to allow him to mount a surprise attack on Gruffydd's court at Rhuddlan. Gruffydd escaped, eventually dying in Snowdonia where he had gone for refuge. Harold then married Gruffydd's widow, Ealdgyth.

Although he was married to Earl Godwin's daughter, Edward left no children when he died. The nearest heir was Edgar the Atheling, who was only a boy. Edward, when dying, named Harold, Earl Godwin's son, king. This was confirmed by the Witan, a council which was the forerunner of our parliament. Unfortunately for Harold, there were two other people who thought they had a better right to the throne than he did, Harald Hardrada king of Norway and William, Duke of Normandy.

William Duke of Normandy was the cousin of Edward the Confessor. Edward had promised the throne to William when he quarrelled with the Godwins. In offering the throne to William and then Harold, Edward created a dangerous situation.

William had once taken Harold prisoner when he was shipwrecked on the Norman coast. He had released him only on condition that he promise to support William in his claim to the throne of England. Harold did not keep his promise. Perhaps he thought that, since he had been forced to make the promise and had not made it freely, he could break it.

The pope supported William. He wished to impose his authority on England and make it conform with the Roman church in such matters as clerical celibacy.⁹ William for his part was very happy to have the pope's blessing. It made his invasion of England look more respectable.

Harald Hardrada's claim to the English throne was based on his relationship to Canute. Harold could probably have beaten either Harald Hardrada or William of Normandy but he could not defeat both.

Do you know what happened next? If not you will have to wait until the lesson for 28th September – or sneak a look in your history book!

Something to listen to¹⁰

Johannes Brahms (1833-1897) died on 3rd April. He had a difficult start to his musical life. His father poor and earned his living playing the double bass. He could see that his son had talent and despite his poverty sent him to have lessons with a good teacher. As a young man Brahms had to earn his living playing the piano in rough dockside taverns. He also gave piano recitals and composed music. It was an exhausting way to earn a living.

In 1850 Brahms met a Jewish Hungarian violinist, Eduard Remenyi, and began giving concerts with

8 Political means to do with power and government. Independence is standing on one's own feet, acting without reference to a higher power or authority.

9 Celibacy means not being married. The Roman church does not allow its priests to marry.

10 Adapted from the music course on *The Mothers' Companion* available from <https://motherscompanion.weebly.com>



him. You can see them both in the picture below. Brahms is standing up. Remenyi taught Brahms about the haunting music of the Hungarian gypsies. Brahms loved the gypsy music and what he heard began to overflow into his own compositions. The music of the gypsies influenced his own music for the rest of his life.

Brahms met the composer Schumann¹¹ in 1853. By this time Schumann was already ill. However, he was very enthusiastic about Brahms's music. Brahms began to play one of his compositions for Schumann and Schumann interrupted him saying, "Clara must hear this too," and went off to fetch his wife. When Schumann returned with Clara, he told her, "Clara, you are now going to hear music such as you have never heard before."

Schumann wrote about Brahms in his music magazine describing him as "...a young man over whose cradle Graces and Heroes stood watch." Schumann's writings in the magazine were very influential and Brahms's career as a composer took off from this moment.

Brahms loved children. When Schumann's illness worsened and he had to go away to an asylum for care, Brahms moved into the Schumann home to take care of the Schumann's seven little children while Clara was away giving concerts to earn their keep. He enjoyed romping with the children and he diligently took care that they had plenty of exercise. "...They seem to grow merrier and stronger every day. I have put away a large bag of sweets and they have to earn every one of them by hard work. They even have to wrestle with each other for them," he wrote to Clara, "...I have once more acquired a passion for jumping. You would be very surprised, I can jump very well and for a long time, at least twice as far as my height and very high."

Find a recording of the Hungarian Dance no.1 for piano duet.¹² This is music in the Hungarian gypsy style to which Remenyi introduced Brahms. Listen carefully. Can you hear how Brahms gives the main theme to the second pianist and the decorations to the first pianist?

The first prime minister¹³

Have you ever wondered who was the very first prime minister? It all came about because we had a German king and if you want to know why *that* happened you will have to wait until July 19th – unless you sneak another look at your history book!

George I (reigned 1714–1727) was the king in question and he did not really speak English. This made it difficult for him to understand what was going on in his royal Council meetings, or Cabinet as it came to be called, and so he stopped going to the meetings. Someone else had to direct them.

The most important of George's ministers was Sir Robert Walpole (1676-1745). On 3rd April 1721 he was appointed first lord of the treasury *and* chancellor of the exchequer, effectively making him Britain's first prime minister. Walpole was a rich squire whose estates were in Huntingdonshire. His aim was to keep the country quiet, peaceful and prosperous to avoid discontent. There was a lot of bribery in politics in those days and Walpole was quite prepared to use it to achieve his ends. He once said of his enemies, "All these men have their price." He always dropped any scheme that looked as if it might cause trouble or disturbance. His motto was, "Let sleeping dogs lie." Walpole

11 See the lesson for 8th June for more about this composer.

12 <https://www.youtube.com/watch?v=W08fvhNSuy8> for instance.

13 Adapted from *The Story of God's Dealings with our Nation* Volume 2 where you can find out more about Walpole and his times. It is available here: <https://www.creationresearchstore.com/s/search?q=The%20Story%20of%20Gods%20Dealings%20with%20our%20Nation>.

did not like to have any rivals for power. As a consequence he preferred to have less able men working under him and he did not let anyone with ability stay in the Cabinet. He pursued policies of lowering taxes, especially the land taxes that affected country gentlemen, and of encouraging trade and industry. It is easy to see how these policies fitted in with his aims of peace, quiet and stability. At this time there was a great enthusiasm for starting companies. Perhaps it was the materialism of this age when things were so low spiritually that made people willing to invest in any mad scheme, such as extracting gold from sea water, fattening pigs by a particular method, or making a perpetual motion machine. One company was the South Sea Company, formed to trade with the Spanish colonies in South and Central America. The directors of the company offered to take over the National Debt from the government so that people who lent money to the government became shareholders in the company. It offered to pay the government seven million pounds for this.

People at once thought that the company must have great prospects. They rushed to buy shares, the price of which rose dramatically. Walpole warned of the dangers of what was happening but no one took any notice. Alas, some of the other companies were discovered to be frauds. A panic set in as people tried to get back what they had invested and most of the companies, the South Sea Company included, went bankrupt. Thousands of people lost all their savings. People began to fear that money lent to the government for the National Debt would also be lost. The Chancellor of the Exchequer¹⁴ was sent to the tower but people trusted Walpole. He had warned of the danger from the outset. His financial skill enabled him to put together an arrangement which left the South Sea shareholders less badly off than they had expected.

Walpole worked hard to keep Britain out of warfare but a trading quarrel with Spain now grew up and Walpole could not prevent Britain going to war. The English were allowed by a clause in the

Treaty of Utrecht to sell 4,800 slaves to the Spanish colonies in South America and to send only one ship load of merchandise for trading. The British carried on illegal trade and the Spanish insisted on searching British merchant vessels. The matter reached a crisis when a certain Captain Jenkins came to the house of Commons with a bottle containing his own ear which was said to have been cut off by a Spanish official who had boarded his ship. This incident caught



people's imagination and the whole country seemed to be demanding war with Spain. Walpole foretold that France would side with Spain and a long and costly war would follow. His advice to avoid war was not taken. "They are ringing the bells now but they soon will be wringing their hands," he said as a wave of excitement over the coming war swept the country.

The war did not go well and Walpole, who had advised against the war, was blamed by the Opposition for not winning it. He resigned and retired in 1741. He had been prime minister for 20 years.

14 By this time John Aislabie was chancellor not Walpole.

Something to read from science history¹⁵

And an horologue? Did you guess? It is anything we use to measure time such as a sundial,¹⁶ a watch, an hourglass¹⁷... or a clock. Rutherford is saying that the Christian is like a rusty clock. Just as a clock with a rusty mechanism would not keep good time, all through his life here on earth the Christian does not serve his dear master well for “sin hath rusted both soul and body.” However, at death all that will change. With our “wheels” scoured clean of rust for evermore we will serve our maker in his heavenly kingdom.

John “Longitude” Harrison (1693-1776), perhaps the world's most famous clock-maker and a younger contemporary of Walpole, was born on 3rd April. He was 28 when Walpole became prime minister and outlived him by 31 years, living on into the reign of George III. He developed clocks with mechanisms that not only remained free of rust, they did not even need oiling!

Harrison's father was a carpenter and Harrison followed his father's trade. In his spare time, however he made and repaired clocks. He seems to have taught himself how to do this as he had little or no formal education as far as anyone knows. A clergyman lent him notes taken at Cambridge on a series of lectures on mechanics. Harrison copied them out and annotated with great care and he also managed to get hold of Newton's *Principia*¹⁸ which he studied diligently.

Before he was 20 he had made his first long-case or “grandfather” clock. The remarkable thing about it was that the mechanism – not just the case – was made of wood. The clock survives and you can see it if you ever visit the Science Museum in South Kensington where it is on display in the Worshipful Company of Clockmakers’ collection.

At some time in the 1720s Harrison received a commission to make a tower clock for the stables at Brocklesby Park in Lincolnshire. Again the mechanism was wood, a combination of oak and a very hard wood called *Lignum vitae*. This has an oily surface that gives it self-lubricating and wear-resisting properties as well as preventing rot and repelling insects. The clock is still there and still tells the time more than 270 years later. The elimination of lubricants was to be important in Harrison's greatest challenge.

Changes in temperature affect the way a traditional grandfather clock runs. In hot weather the pendulum expands with the heat, causing the clock to run slower. In cold weather the clock will speed up. Harrison invented a device called a “grid-iron” that prevented this happening in his clocks. He also invented the “grasshopper” escapement which was a low friction improvement on earlier clocks. He and his brother constructed and tested these improved clocks, patiently checking their accuracy against the movements of the stars relative to the frame of their own house window and a neighbouring chimney stack. They found their clocks to be accurate to within a second a month. This may not sound particularly spectacular – until you realise that the most skilled clock makers of the day using expensive materials and skilled London craftsmen could not do better than one minute per day!

Difficulties in calculating longitude at sea prior to 1714 made voyages dangerous. Sailors had no way of accurately measuring their location in terms of longitude although latitude could be calculated from the sun or stars. The Merchants and Seamen, petitioned Parliament which responded with the Longitude Act of 1714. This offered a money prize for a clock that would remain accurate despite the motion of a ship at sea. Accurate time keeping was crucial to calculating

15 Information from <https://www.rmg.co.uk/stories/topics/harrisons-clocks-longitude-problem> and other sources.

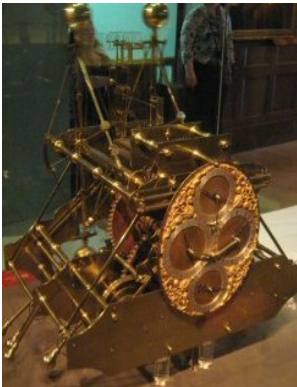
16 If you did the lesson for 27th March you may have made your own sundial.

17 See the lesson for 17th April.

18 More to come about Newton in the lesson for 5th July.

longitude. The terms of the prize were that the clock had to be “practical and useable”. The more accurate the calculations obtained by using the clock, the more prize money there would be. For accuracy within half a degree of longitude there would be £20,000. For accuracy within two thirds of a degree, £15,000. The sum offered went down to £10,000 for accuracy within one whole degree but this was still a very large amount of money in 1714. A Longitude Board was set up to scrutinise any plans submitted for the prize but no plans that would be even remotely adequate were submitted and the board never even needed to meet. Things changed, however, in 1730.

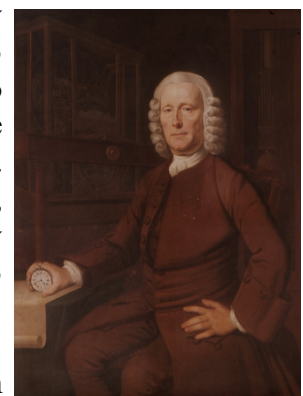
When news of the prize reached Harrison he decided that his very accurate clocks could be adapted to marine conditions and set to work to produce plans. In 1730 he set off on the 200 mile journey to London and took his idea to board member Dr Edmond Halley¹⁹ (1656-1742) at the Royal Observatory at Greenwich. Halley sent him to clock maker, George Graham. Harrison was worried. Would Graham just steal his idea? But the Quaker George Graham was honest – so honest in fact that he was known in the clockmaking trade as “Honest George Graham”. He was frankly astounded at what Harrison had thought out and lent him money to continue to develop his idea and produce a clock for the prize.



Harrison's first clock was not ready for presentation to the Board for another five years. It used the grasshopper escapement but Harrison realised a pendulum could not be regulated properly while the clock was being rocked about at sea. He replaced it with two dumbbell balances linked together. The fact that it needed no lubrication was useful too. Lubricants, even today, break down and have to be replaced. This clock is still functioning (it is known as H1 today) and is on display at the Greenwich observatory.

“Honest George” Graham was still helping Harrison. He took the clock to the Royal Society. They in turn spoke to the Longitude Board. A trial was arranged on a naval vessel to Lisbon. Harrison and his clock set off. On the outward voyage the clock did not perform as well as Harrison had hoped but on the return journey it behaved excellently. Harrison was able to predict where the vessel would make landfall more correctly than the master of the ship – by a whole sixty miles!

This is not the end of the story. Harrison went on to develop clocks we now call H2, H3 and H4 but he was never awarded the full prize money to which he (and many others) felt he was entitled. The Board wanted to ensure that other clock makers, not just Harrison, would be able to make his clock. They withheld half the prize money until this had been proved. Harrison was angry. This had not been one of the original conditions. H5, his final chronometer, actually a watch rather than a clock, was tested by King George III himself who was so impressed that he threatened to go to parliament himself if Harrison was not paid!



In the end, although the prize was never actually awarded, Harrison received a total of £23,065 for his clocks. Captain Cook²⁰ used a version of one of them on his voyages and sung its praises. One was lent to Captain Bligh of the *Bounty* and was carried off to Pitcairn Island by the mutineers.²¹ This clock is also at Greenwich today after many adventures. It is in the Maritime Museum. Do look out for it if you ever go there on a visit.

19 We will be learning about Halley and his most famous discovery later this month in the lesson for 20th April.

20 Read more about him in the lesson for 25th June.

21 We learned all about this last month in the lessons for 29th and 30th March.

Harrison's clocks were – and still are – remarkable. But even he could not make a clock that would carry on for ever!²² The principle behind Rutherford's remarks, with which this lesson began, applies to us all. Eternal life is something Christians possess that enables them to face death without fear. At death the Christian passes into a life of perfection beyond the very best that is possible here on earth. This is the greatest gift that can ever be bestowed on any of us. Do you have it? If not, if you are wise, you will pray earnestly now. Ask God to grant you repentance and his gift of eternal life.

22 See <https://www.youtube.com/watch?v=0hNVmaetPoE> for instance. What do you think?