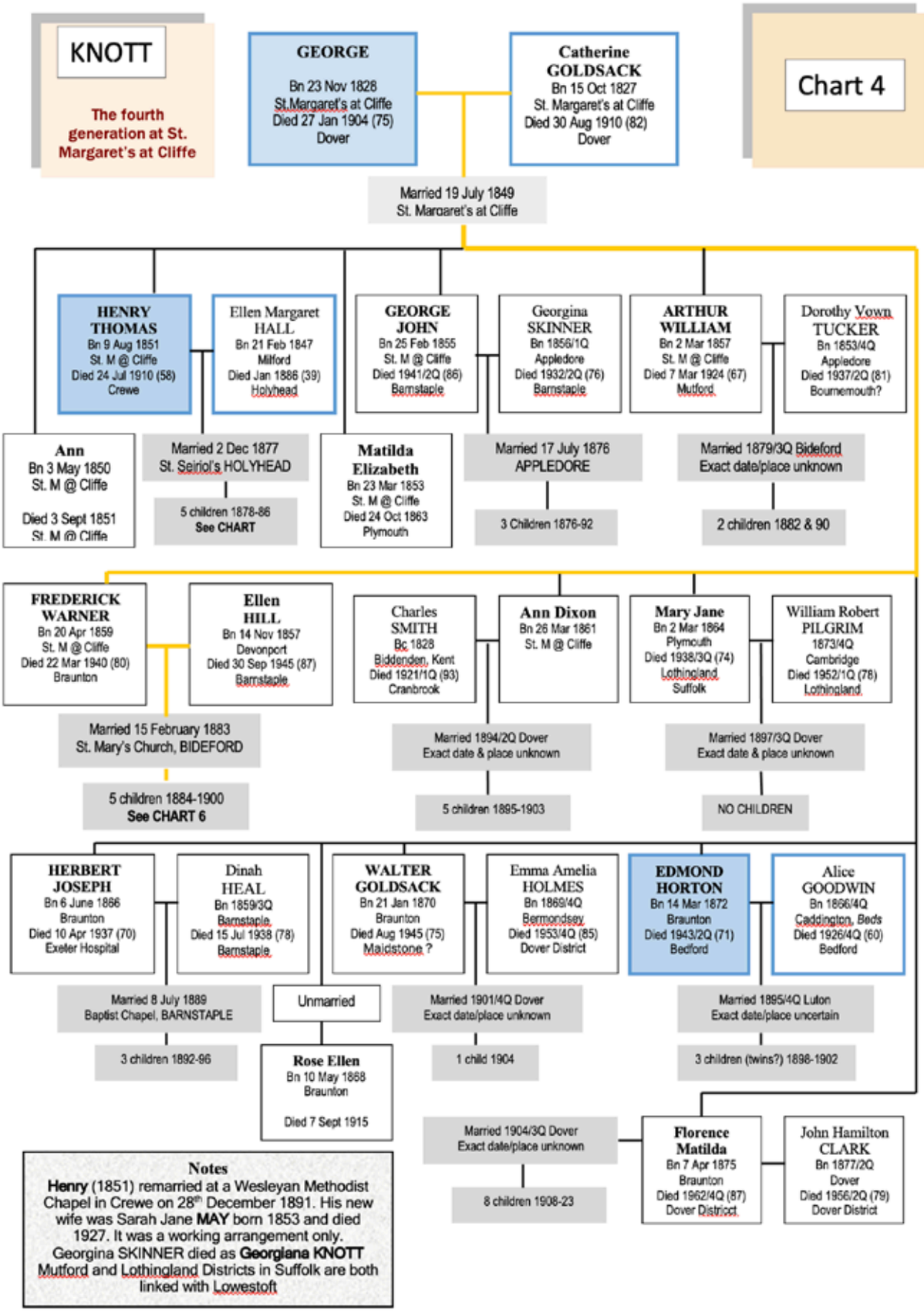
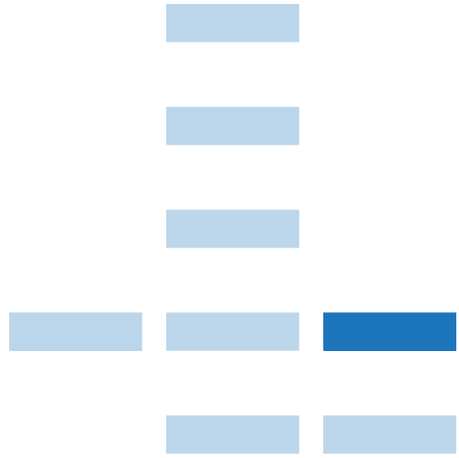


Above: The family tree of the fourth generation of Knott light keepers, no longer limited to South Foreland. George and Catherine establish a remarkable generation with a large family and a career at five lighthouse sites before returning to their home territory in Dover. George (1828-1904) handed the tradition on to his sons, Henry Thomas (1851-1910) and to Edmond (1872-1934. Frederick Warner Knott and Ellen (neé Hill) were great-grandparents of the authors.



George & Catherine

Extracted from: Light On The Forelands by Ken & Clifford Trethewey, Jazz-Fusion Books (2022)

The Golden Age of Victoria

George heads the fourth generation of Knott lighthouse keepers; A complete rebuild of South Foreland as part of a Trinity House upgrading programme takes place; Further migration of the Knotts to new lighthouse locations occurs. The Forelands are lit with oil; Experiments with electricity are carried out; George is moved to Eddystone.

As we enter this story of the fourth generation of Knott light keepers, we should offer help to readers bewildered by the great number of names being used here, especially because four of the eight light keepers in the Knott family were called Henry! The family action so far has been entirely centred around the two lighthouses on the South Foreland where the Knotts have been providing lights for mariners since, perhaps 1730, but definitely since 1747. After William the First (pun intended), his son Henry 1 and his grandson Henry 2 from the second and third generations carried on what was becoming a tradition, although we should remember that it was common for sons to enter into the same employment as their fathers. At South Foreland, where there were two lighthouses to maintain, perhaps that was more likely than in places where there was only one, especially in times when a lighthouse may have had but one keeper anyway. In the third generation Henry 2 and Ann had enjoyed a family of six children until Ann's untimely death in 1833. Of these, three sons became keepers of the fourth generation - Henry 3 (b1819), John (b1820) and George (b1828).

In the wider world, Victoria had ascended to the throne in 1837 and the nation was set to embark on a great period of British history known as the Age of Empire. In a sense, the Forelands - North and South - celebrated with a major upgrade to their three lighthouses in the early 1840s as Trinity House at last took full responsibility for all lighthouses in their jurisdiction and the rapidly advancing technology associated with them.

In tandem with the technological change, so also did the careers of the light keepers take on new challenges, not least of which were the requirements of a new, more purposeful employer, to wear uniform and to move periodically around the country according to the 'exigencies of the service', as the Navy would say. Henry 3 would be sent north to Yorkshire and Flamborough Head. John was able to stay local with George at South Foreland. With Catherine at his side, George, was later to enjoy a varied career that took him to the West Country where he served in the famous Smeaton Eddystone lighthouse - amongst others - before returning to a final posting at North Foreland and glorious retirement in the land of his birth. And there were yet more adventures in lighthouses to come for two of his own sons in the fifth generation - Henry T and Edmond. Before we reach their stories, we two writers will need to weave a complex pattern from numerous threads formed from this remarkable period of history.

A Deplorable Event

It is now 1847 at South Foreland and with the lighthouse builders long gone and the disturbed environs of the lighthouses beginning to settle down it had been barely a week since the small group of Knott family members, decked out in their Sunday-best, occupied a pew in the Parish Church. On the 4th April 1847, it was Easter Day, the most important day in the church calendar for the Rev. John Maule. He was wearing his best smile at seeing so many of his parishioners attend church, but all was not well at the Upper Lighthouse where John Knott and Samuel Finnis were in charge.

On the following Saturday morning, as the hands on the lighthouse clock approached 11 o'clock, John Knott heard Sam Finnis's sister call his name in a tremulous, shrill voice. When he found her she said that she could not open the door in the passage nor that of the kitchen parlour. This puzzled John, but he managed to force them open. Sam's sister pushed by him and made straight for her bedroom and on into an adjoining room. The sight that befell her eyes triggered a piercing scream and John, who was following close behind her, saw in an instant its shocking cause. Sam Finnis was lying face down in a huge pool of blood.

John's instinctive reaction was to seek help, but only his father Henry and brother George were at hand at the Low Light. George was dispatched at top speed into the village to find the Rev. Boys, whilst Sam's sister set off for Dover to find the surgeon. Meanwhile, Henry and John kept onlookers at a distance whilst they turned Sam's body to reveal a gaping, ghastly cut to his throat. Curiously the razor was not on the floor. John found it on the kitchen table, abandoned at the instant when Sam had made his irrevocable decision.

The inquest into Sam's unexpected demise was held in the lighthouse on Tuesday 13th April when Thomas Thorp Delasaux, a solicitor practicing in Dover, had driven up that morning from his home at 1 Sydney Villas in Guston [1] to hear the depositions of the three principal witnesses.

John Knott opened the proceedings by stating that Samuel Finnis was the Principal Keeper at the Upper Light and he had known him for more than twenty years. He was 53 years old. Following the harrowing account of his discovery of the body, he was asked when he had last seen Finnis. John replied that it had been on the afternoon of the previous day (Friday) when he had spoken to him in the passage of the lighthouse. He said that he had looked ill, but he had no reason to think that anything was troubling him. He did admit to an argument with him about three weeks previously, when Finnis had become very excited, but he concluded by telling the coroner that Finnis's sister went to Dover to fetch a surgeon to attend her brother.

The next witness to be called was Devonian Richard Davis.[2] He was the Trinity House Agent and Superintendent of Lighthouses for the area and he had come from Ramsgate for the hearing. He told the coroner that he had been at the lighthouse on the Friday (9th April) as he had become quite concerned about Samuel Finnis's state of health. When he had arrived at the light Finnis seemed very dejected, but in reply to his enquiry Finnis had said – I am very well, but my mind is disturbed. Davis stayed at the light for upwards of two hours and during that time Finnis had become more composed, but he gave him a letter to be forwarded to Trinity House. Davis had glanced at its content and concluded that Finnis 'must be mad.' Unfortunately, the content of that letter will never be known.

It was now the turn of George Rutley, surgeon, of Biggin Street, Dover [3] to stand before the coroner to offer his account of his involvement in the events of that dreadful day. He said that it was about 1 o'clock when he arrived at the lighthouse and found Finnis lying on his back, quite dead. There was an extensive wound to the left side of his throat with the large vessels fatally divided. It was his opinion that the wound had been very probably caused by the razor or something similar. However, the surgeon added that he knew Finnis and had seen him in Dover about a fortnight previously complaining that he was 'feeling ill.' Finnis was a man who was naturally excitable and, in Rutley's view, a man of a very nervous disposition.

Thomas Delasaux recorded his verdict as Temporary Insanity, but he added some very touching words to conclude the proceedings. He said,

"We deeply regret to record this deplorable event. The deceased had for some time laboured under a severe internal infirmity – an infirmity the nature of which tends to depress the spirits to a great extent. Latterly, it had increased and had so acted on his

1 1851 Census HO107 Piece 1632 Folio 105 Page 21.

2 1851 Census HO107 Piece 1630 Folio 424 Page 1 – 2 Bellevue Place, Ramsgate aged 66.

3 1841 Census HO107 Piece 494/6 Folio 43 Page 1. He was 30 at the time of the census.

constitution that he had become exceedingly nervous and wretched. In an evil hour, reason entirely fled and he fell by his own hand. His unhappy end has excited universal sympathy and has cast a general gloom over the village. Those who have been in the habit of using the lighthouse during the 25 years in which he held the situation, will long remember his urbanity and attention." [4]

The report in the *South Eastern Gazette* followed the story to its conclusion when it said that …

" … The body was interred in the churchyard at St. Margaret's on Wednesday and to mark the respect in which the deceased was held, he was followed to the grave by several gentlemen with whom he had been on terms of intimacy."

The burial register does not agree with this report as it records the date of the burial as the 16th April – a Friday. This gives an insight into the inherent unreliability of newspaper reports in those days. Newspapers did not employ journalists, but simply assembled copy from second and third hand sources, and this can be seen in the vague and generalized statements that were often included. The sentence above is a good example. The correspondent was probably using common practice to guess what had occurred and to write something suitable. Whatever the truth of the matter, one thing is certain. Samuel Finnis lay in his coffin in the lighthouse for almost a week. There was no laughter to be heard in the lighthouse during the day and it must have been a very eerie, uncomfortable experience for the duty watch keeper by night.

The Knotts Occupy Both Lights

Second marriages fascinate some people and there would have been those in the village of St. Margaret's who would have been watching Henry and Margaret following their marriage in 1844. Henry had been a widower for ten years and Margaret had never been married, so I expect there were a few knowing looks and whispered comments when Margaret's condition was discovered. Their first child, Henry Needham Knox Knott was baptised on the 6th February 1848. Henry was 51 years old and George and John now had a step-brother.

George had initially moved to the Upper Light to support his brother after his dreadful experience, without knowing of stepmother Margaret's condition, but he took the opportunity to start planning his own marriage to Catherine Goldsack, Matilda's sister,[5] and he was sure that the two women would enjoy living with each other once again and dispel the gloom that had temporarily enveloped the lighthouse.

On Thursday 19th July 1849, after their Banns had been read in church on three consecutive Sundays, Catherine Goldsack walked down the aisle of St. Margaret's parish church in front of all the assembled family and friends to stand proudly beside a handsome George Knott, resplendent in his Trinity House light keeper's uniform. The marriage certificate, however, contained one surprise. It was not witnessed by either of their parents. Instead we see the names of David Goldsack and Elizabeth Knott. Elizabeth was George's older sister, whose life was destined to end so tragically at the lighthouse (see p142-3), but David Goldsack was a young lad, barely 16 years old, the son of George and Margaret Goldsack. He had been born in the parish where his father was a farm labourer and was baptised on the 29th September 1833. The headstone marking his parent's burial was to be found in the churchyard and shows that his father George (b1784) died in 1872, aged 88. Since he was contemporary with Thomas (b1786) they may have been brothers. Sadly, the page in the register where a Goldsack surname appears is just legible; the rest of the detail is not, but if George and Thomas were, indeed, brothers then David and Catherine were cousins. David's name is unusual for this period, and it should have made him easy to trace, but he couldn't be found in the records for 1851 or 1861. The answer to that mystery was found in another record. It appears that he signed on as a merchant seaman and his ticket is recorded in a seamen's ledger.[6] Towards the end of 1867 he married Fanny Settlefield in the Eastry District, and in 1871 the couple was found living in the Shand at Walmer where David had been posted as a police constable in the Kent Constabulary.

Ten days after Catherine's wedding her mother Ann Goldsack died. It was Sunday 29th July 1849. Her entry in the burial register on the 4th August was brief, noting only that she lived in the village and was just 63 years old.

4 *South Eastern Gazette*, Tuesday 20th April 1847.

5 Matilda was married to John, see p132.

6 National Archive, BT114 1845-54.

A Year Of Births And Deaths

1851 was not a good year at South Foreland and the first sign that something was amiss appeared in the Post Office Directory for Kent that was published in February. It listed the keepers at South Foreland as Henry Knott at the Lower Light and Robert Wood at the Upper Light. The census for 1851 provided some more clues.

On the night of the 30/31 March it recorded that Robert Wood was the Assistant Keeper lodging at the High Light with George Knott and his family. John Knott and Matilda were still living next door in the light's twin cottage, with their father Henry (aka Henry 2 or Henry Junior, by us) residing in the Low Light. This was in agreement with the facts published in the Post Office Directory. However, there were other people lodging with John, one of whom was Thomas Goldsack, the widowed father of Matilda and Catherine. This was only to be expected, but there was someone else in the house - Henry Knott's mother-in-law, Sarah Arnold, a nurse.

Sarah Arnold was a widow in the same circumstances as Thomas Goldsack and it would be quite normal for her daughter Margaret, Henry's wife, to provide her with a home, but she wasn't in Margaret's house, so why was that? To be described as a 'nurse' in 1851 was unusual, especially for a woman of 64 years of age, so she may have been there for a specific purpose which would also explain the presence of Robert Wood. John Knott was seriously ill and could not carry out his duties as a light keeper. Woods was his relief and Sarah Arnold was his nurse.

John Knott died on Wednesday 2nd April 1851 – two days after the census – yet it took ten days[7] to bury him in the churchyard at St. Margaret's at Cliffe with all the family gathered around. His headstone is still there, marking his last resting place, although the lettering in the soft sandstone is rapidly disappearing. I wonder why the family waited so long before burying him? In fact over the next four weeks there were four more burials in which everyone bore a name linked to the family and they were all young: Ann Goldsack, 3 years, George Finnis, 7 months, Albert Hogben, 14 years 10 months and Charles Hogben, 6 months.[8] These deaths paint a picture of a parish that was very poor.

The Knott family's acquaintance with grief did not end with John's wake for tragedy next struck George and Catherine Knott. After their marriage, Catherine quickly demonstrated her ability and willingness to produce a family. It is even possible that she conceived on her wedding night, as 41 weeks later – on Friday 3rd May 1850 – George and Catherine's first daughter emerged into the world. A month later, on Sunday 2nd June, she was baptised and named Ann, but her parents' delight at their first born would be short lived. Little Ann Knott, died on Wednesday 3rd September 1851 and the family had to make the dreary, processional trek with the tiny coffin to the churchyard on the following Monday - five days later. She was exactly 16 months old and had already developed her own little character. This second tragedy might have struck suddenly, as is often the case with infants, and, if it did, it must have been a terrible blow to Catherine who already had her hands full with another new baby. Henry Thomas had been born just four weeks before little Ann died and this could have made Sarah Arnold's presence at the High Light even more useful, but that cannot be said with any certainty. Ann's death caused Catherine to delay Henry's baptism at the parish church until the 5th October as Victorian mourning etiquette discouraged the pleasure of social gatherings until the due time had elapsed. It was nine months for a child, but a christening could not be delayed indefinitely. The death of a child was bad enough, but for that child to be unbaptized was unthinkable.

The New Manning System Reaches The South Foreland Lights

The Census Enumerator suggested in 1851 that there were no other residences between the Upper and Lower Lights following their rebuilding, although he did insert one entry between the two families at the Upper Light which must have been a mistake.

Henry Junior and George Knott had been left shorthanded for a second time after Samuel Finnis had died; now brother John had gone too. However, the identity of the new keeper is a little uncertain. It is one thing to say that Robert Wood was the Assistant Keeper in 1851, but who was he and how long did he stay?

Robert and Sarah Wood

The census suggests that Robert was born in Liverpool in 1820 and was a bachelor, but he did not leave South Foreland without a change in his

7 Some readers may not appreciate that in the days before refrigeration, burials were normally carried out in just two to four days after death.

8 Hogbens were related by marriage to the Finnis family.

ABOVE: An old postcard of the lighthouse taken from the northeast entrance and the approaches from St. Margaret's.

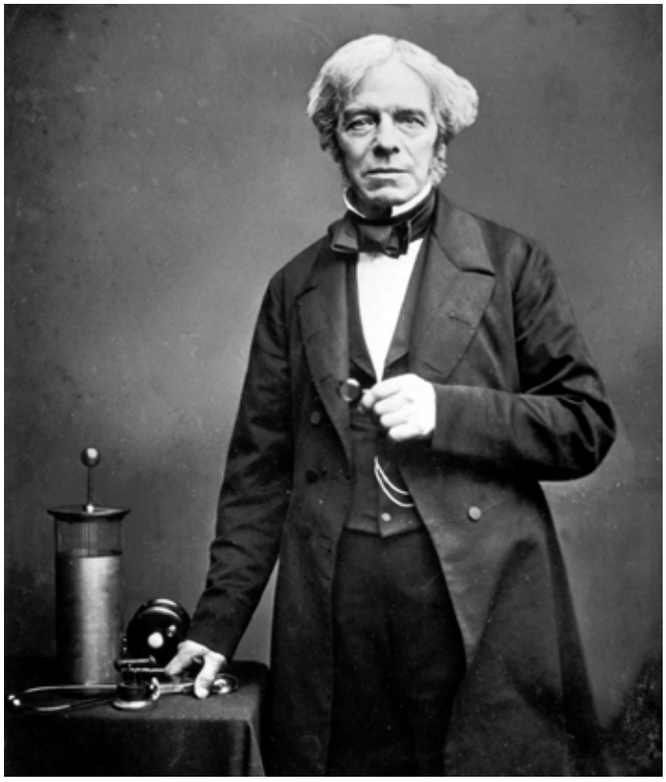
circumstances. On the 31st March 1853 he married Sarah Fagg in the parish church and his address was written in the marriage register as South Foreland Upper Light. Sadly, there is no evidence of any long term service with Trinity House.

Following the dramas of the late 1840s that culminated in 1851, the remainder of the 1850s attracted little attention beyond the births of two more boys to George and Catherine Knott – George (1855) and Arthur (1857), yet Assistant Keeper Robert Wood must have been replaced when he and his new wife decided to leave.

It was 1859 before there was a sudden and dramatic change as, not one, but two keepers arrived. Something must have happened in the previous year to precipitate these appointments, and we can assume it was the decision to electrify the South Foreland light. We shall see the impact of it after the new keepers have been introduced.

Welshman John Griffiths came directly from three years on the Eddystone Rock which had been his first appointment after joining Trinity House in 1856. The 'worst' draft of his induction was behind him and he was probably very pleased to now have a comfortable land station, but he had arrived at a critical time. Something new was in prospect. Inevitably George Knott and 'Taffy' Griffiths would have liked an opportunity to exchange reminiscences especially those concerning the most famous lighthouse in the world – John Smeaton's Eddystone – but they were extremely busy on the South Foreland Upper Light as preparations were made to follow the instructions of an eminent scientist.

With two residences at each light, I doubt that anything had changed between George Knott and his father since 1851, so George and John Griffiths were focused upon the Upper Light, whilst Henry Knott, at the Lower Light, had been joined by a second keeper, William Richards, who had arrived with his wife Elizabeth at about the same time. Coincidentally, Richards was another Welshman having been born into a light-keeping family at St. Brides in Pembrokeshire in 1823. He would stay at South Foreland until at least 1866. However, both Welshmen had arrived as a result of a decision by



Above: Michael Faraday.

the Elder Brethren made in 1858 to invite Michael Faraday to use the South Foreland Upper Light as a test-bed for his proposal to light the lamp by electricity.

Michael Faraday - Working Man's Hero[9]

There is little doubt that the second most profound invention in the history of the world is the internal combustion engine. In a little over a hundred years, more effort was expended by humans into its development than any other manufactured device - one that can be made to work without any dependence upon electricity. Finally, here in the 21st century, we find ourselves turning away from it to return to an idea first proposed in the early 19th century by Michael Faraday - the electric motor, a device that 200 years after its invention offers us at least some prospect of fighting the tide of environmental change.

Electricity has also transformed our lives and will continue to do so for the foreseeable future. The historian Iwan Rhys Morus[10] has described the 1800s as 'The Electrical Century' because, more than anything else, the investigation of electricity and its application to countless inventions played a transformative role that, arguably, eclipsed even the invention of the motor car.

Faraday advanced the understanding of electricity and invented the electric motor and the electric generator. He had conducted so many scientific experiments with electricity that, by 1851, it was the most heralded element of the scientific revolution. As a philosopher, Faraday was most comfortable with the process of discovery and, indeed, looked down upon the art of invention. To take up a discovery and convert it into a useful device was, to him, a lesser occupation, even if the creation of a great deal of wealth was a result. A modest man with strong religious convictions, he shied away from fame - and certainly from fortune. He declined to be honoured in the same way as many of his peers, yet in his own lifetime became one of the most important and famous scientists in history. He preferred to leave it to others to apply the things he had discovered.

By the mid 1850s the world was shrinking thanks to the revolutionary electric telegraph that allowed instant communication by means of a worldwide network of undersea cables. This was as big a step forward as the smartphone has been to us, yet Faraday's role was to progress the science and to leave the engineering to others. Thus, when the Knott family were visited by Michael Faraday, it is probable that they knew just how important he was, but his presence was to observe and advise rather than to execute. It was to others such as Professor Holmes that the task fell to make some very large, heavy and powerful machines work their magic to create the brightest artificial lights ever seen.

Michael Faraday became a model for the working man's hero, born on 22 September 1791 to a London blacksmith and a farm labourer's daughter. His early life was difficult owing to his father's ill health, and his basic education was obtained with great difficulty and hard work. Fortunately, his enthusiasm as a messenger boy led to teenage employment as a bookbinder's apprentice, and he was able to develop his knowledge by reading many of the printed materials he worked with, particularly in the nascent subject of chemistry.

This period of Regency England was a time of burgeoning interest in science - an occupation carried out mostly by wealthy and privileged individuals under the name of natural philosophy. Science and engineering were still unnamed and unstructured disciplines practised by enthusiastic individuals fortunate enough to possess the time

9 Thompson, Silvanus P : "Michael Faraday, His Life and Work", Cassell (1898). https://www.gutenberg.org/files/65735/65735-h/65735-h.htm

10 Morus, Iwan Rhys: "Michael Faraday And The Electrical Century", *Icon Science*, (2004), pp230.

and the wherewithal to think for a living. Awareness of the existence of electricity had originally been sparked by observations of lightning and other curious effects in the natural world, but there was, as yet, no firm understanding of what were still just a collection of unexplained phenomena. It was through the work of the English philosopher, William Gilbert around the start of the 17th century that the word electricity finally entered the vocabulary and the strange relationships between magnetism and static electrical charge were considered by many to be closer to sorcery than science. Progress in the understanding of these inscrutable effects was slow.

By the early 1800s, in Faraday's youth, it had become a popular past-time to attend public lectures that combined crude science with theatrics, and it was immersed in this setting that Faraday found himself when he was fortunate enough to be able to attend occasional lectures, thanks to the generosity of an older brother, at as much as a shilling a time. Much later, it would be as a public lecturer himself that Faraday would gain sufficient national prominence to make him the leading scientist of his time. Indeed, it became his destiny to inspire the Scottish physicist James Clerk Maxwell to propose one of the greatest theories of science - the demonstration that electricity and magnetism, two of the five fundamental forces of nature, could be unified.

Throughout the first half of the nineteenth century, the number of instances of electric and magnetic effects increased exponentially because, after all, these were two of the fundamental forces of physics. It was inevitable that they became associated with life itself, and many disturbing experiments were carried out using the bodies of dead criminals to show that electricity could be used to induce muscle movement. It fell to Faraday to explain these effects by thorough and careful experiments.[11] It was thanks to a customer at the bookbinder's shop where he worked that Faraday gained access to lectures by the leading scientist at London's prestigious Royal Institution, Sir Humphrey Davy. After attendance at one of his lecture courses, Faraday was smart enough to present the great Cornishman with a beautiful bound copy of his meticulously written lecture notes. This was sufficient to seduce Davy into making Faraday his laboratory assistant. This was Faraday's ultimate breakthrough from the downtrodden world of London's working class into the genteel world of the privileged, scientific elite.

Electric Magic

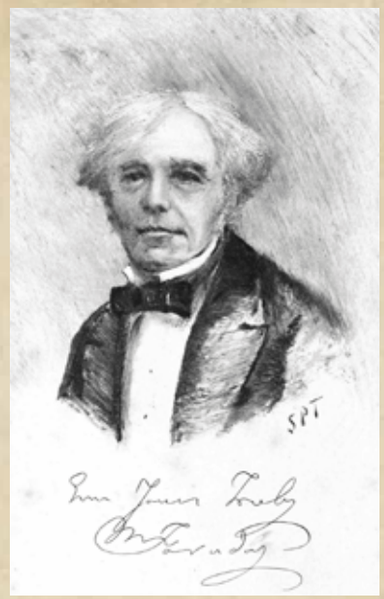
Two effects that Michael Faraday presented to the world were simple yet profound because of the beautiful way in which they fitted together. In the first case, if he took a coil of copper wire and passed a magnet through the centre of it, an electrical current flowed through the wire. The term now used for this effect is electromagnetic induction, and it is the principle behind the generation of electricity.

In the second case, Faraday considered its reverse. If he passed an electric current through a coil of copper wire, a stationary magnet inside the coil could be made to move. This is the principle of the electric motor and the two cases are perfect examples of principles of physics - seemingly abstract - even useless to some people like Faraday's questioner, yet immensely valuable to society. They can be demonstrated by any school child today with a battery, a magnet and a coil of wire, yet this amazing discovery changed the world.

Of course, there is a yawning gap between such simple observations and the wonderful machines that have resulted from them, and as far as Faraday was concerned it was for others to figure out how best to apply his new understanding. At first it was types of steam engine that, when the flow of steam was controlled, could be used to rotate a turbine. With magnets attached, the turbine could create electricity in a coil that surrounded it. Later, the internal combustion engine took over the role of the steam engine in many applications and remains a robust, portable way of generating electricity today.

In lighthouses, it was the realization that, through a better understanding of lightning and electrical discharge, a brilliant light could be created by means of a spark across two carbon (graphite) electrodes. This light was brighter than anything that had been achieved by other means, and was an ideal solution to the problem of generating warning lights for many miles over the sea. It was the development of electrical generators derived from Faraday's researches that were the key to success, and it was at South Foreland where this ground-breaking technology was tried out, under the close supervision of light keepers, some of whom were called Knott.

11 Faraday's scientific works were originally published in three volumes between 1839 and 1855. Selections from these volumes form the basis of a popular volume entitled, "Experimental Researches in Electricity", Everyman's Library 576, Dent/Dutton (1914), Reprinted (1943).



Weekly Evening Meeting, Friday, March 9, 1860. The Lord Wensleydale, Vice President, in the chair. Professor Faraday, DCL FRS

On Lighthouse Illumination – The Electric Light[1]

The use of light to guide the mariner as he approaches land, or passes through intricate channels, has, with the advance of society and its ever increasing interests, caused such a necessity for means more and more perfect, as to tax to the utmost the powers both of the philosopher and the practical man, in the development of the principles concerned, and their efficient application. Formerly the means were simple enough; and if the lights of a lantern or torch was not sufficient to point out a position, a fire had to be made in their place. As the system became developed, it soon appeared that power could be obtained, not merely by increasing the light but by directing the issuing rays: and this was in many cases a more powerful and useful means than enlarging the combustion; leading to the diminution of the volume of the former with, at the same time, an increase in its intensity. Direction was obtained, either by the use of lenses dependent altogether upon refraction, or of reflectors dependent upon metallic reflection; and some ancient specimens of both were shown. In modern times the principle of total reflection has also been employed, which involves the use of glass, and depends on both upon refraction and reflection. In all these appliances much light is lost: if metal be used for reflection, a certain proportion is absorbed by the face of the metal; if glass be used for refraction, light is lost at all the surfaces where the ray passes between the air and the glass; and also in some degree by absorption in the body of the glass itself. There is, of course, no power of actually increasing the whole amount of light, by any optical arrangement associated with it.

The light which issues forth into space must have a certain amount of divergence. The divergence in the vertical direction must be enough to cover the sea from the horizon, to within a certain moderate distance from the shore, so that all ships within that distance may have a view of their luminous guide. If it have less, it may escape observation where it ought to be seen; if it have more, light is thrown away which ought to be directed within the useful degree of divergence: or if the horizontal divergence be considered, it may be necessary so to construct the optical apparatus, that the lights within an angle of 60° or 45° shall be compressed into a beam diverging only 15°, that it may give in the distance a bright flash having a certain duration instead of a continuous light, – or into one diverging only 5° or 6°, which, though of far shorter duration, has greatly increased intensity and penetrating power in hazy weather. The amount of divergence depends in a large degree upon the bulk of the source of light, and cannot be made less than a certain amount, with a flame of a given size. If the flame of an Argand lamp seven eighths of an inch wide, and 1½ inches high, be placed in the focus of an ordinary Trinity House parabolic reflector, it will supply a beam having about 15° divergence: if we wish to increase the effect of brightness, we cannot properly do it by enlarging the lamp flame; for the lamps are made for the dioptric arrangement of Fresnel, which have as many as 4 wicks, flames 3½ inches wide, and burn like intense furnaces, yet if one be put into the lamp place of the reflector referred to, its effect would chiefly be to give a beam of wider divergence: and if to correct this, the reflector were made with a greater focal distance, then it must be altogether of a much larger size. The same general result occurs with the dioptric apparatus; and here, where the four-wicked lamps are used, they are placed at times nearly forty inches distant from the lens, occasioning the necessity of a very large, though very fine, glass apparatus.

On the other hand, if the light could be compressed, the necessity for such large apparatus would cease, and it might be reduced from the size of a room to the size of a hat: and here it is that we seek in the electric spark, and such like concentrated sources of light, for aid in illumination. It is very true, that by adding lamp to lamp, each with its reflector, upon one face or direction, power can be gained; and in some of the revolving lights, ten lamps and reflectors unite to give the required flash. But then not more than three of these faces can be placed in the whole circle; and if a fixed light be required in all directions round the lighthouse nothing better has been yet established than the four-wicked Fresnel lamp in the centre of its dioptric and catadioptric apparatus. Now the electric light can be raised up easily to an equality with the oil lamp, and if then substituted for the latter, will give all the effect of the latter; or by expenditure of money it can be raised to a five- or ten-fold power, or more, and will then give five- or ten-fold

1 This article is a reproduction of the original, Proceedings of the Royal Institution, 3, (1860) 220-223. For editorial purposes, a very few minor edits have been made. Faraday used the word 'lanthorn' in place of 'lantern' and spelled 'reflection' as 'reflexion'.

effect. This can be done, not merely without increase of the volume of the light, but whilst the light shall have a volume scarcely the two thousandth part of that of the oil flame. Hence, the extraordinary assistance we may expect to obtain of diminishing the size of the optical apparatus and perfecting that part of the apparatus.

Many compressed intense lights have been submitted to the Trinity House; and that Corporation has shown its great desire to advance all such objects and improve the lighting of the coast, by spending, upon various occasions, much money and much time for this end. It is manifest that the use of a lighthouse must be never failing, its service ever sure; and that the latter cannot be interfered with by the introduction of any plan, or proposition, or apparatus, which has not been developed to the fullest possible extent, as to the amount of light produced, – the expense of such light, – the wear and tear of the apparatus employed, – the steadiness of the light for sixteen hours, – its liability to extinction, – the amount of necessary night care, – the number of attendants, – the nature of probable accidents, – its fitness for secluded places, and other contingent circumstances, which can as well be ascertained out of a lighthouse as in it. The electric spark which has been placed in the South Foreland High light, by Professor Holmes, to do duty for the six winter months, had to go through all this preparatory education before it could be allowed this practical trial. It is not obtained from frictional electricity, or from voltaic electricity, but from magnetic action. – The first spark (and even magnetic electricity as a whole) was obtained 28 years ago. [Faraday, Philosophical Transactions, 1832, p32] If an iron core be surrounded by wire, and then moved in the right direction near the poles of a magnet, occurrence of electricity passes, or tends to pass, through it. Many powerful magnets are therefore arranged on a wheel, that they may be associated very near to another wheel, on which are fixed many helices with their cores, like that described. Again, a third wheel consists of magnets arranged like the first; next to this is another wheel of the helices, and next to this again a fifth wheel carrying magnets. All the magnet wheels are fixed to one axle, and all the helix wheels are held immovable in their place. The wires of the helices are conjoined and connected with a commutator, which, as the magnet wheels are moved round, gathers the various electric currents produced in the helices, and sends them up through two insulated wires in one common stream of electricity into the lighthouse lantern. So it will be seen that nothing more is required to produce the electricity than to revolve the magnet wheels. There are two magneto-electric machines at the South Foreland, each being put in motion by a 2 hp steam engine; and, excepting wear and tear, the whole consumption of material to produce the light is the coke and water required to raise steam for the engines, and carbon points for the lamp in the lantern.

ABOVE: The electrical generator designed by Holmes and installed at Souter Point. The first of many designs that appeared in quick succession once the principles had been established, this was very similar to the one trialled at South Foreland.

The lamp is a delicate arrangement of machinery, holding the two carbons between which the electric light exists, and regulating their adjustment; so that whilst they gradually consume away, the place of the light shall not be altered. The electric wires end in the two bars of a small railway, and upon these the lamp stands. When the carbons of a lamp are nearly gone, that lamp is lifted off and another instantly pushed into its place. The machines and lamps have done their duties during the past six months in a real and practical manner. The light has never gone out, through any deficiency or cause in the engine and machine house: and when it has become extinguished in the lantern, a single touch of the keeper's hand has set it shining as bright as ever. The light shone up and down the Channel, and across into France, with a power far surpassing that of any other fixed light within sight, or anywhere existent. The experiment has been a good one. There is still the matter of expense and some other circumstances to be considered; but it is the hope and desire of the Trinity House, and all interested in the subject, that it should ultimately justify its full adoption.♦

Henry And George Knott Meet Michael Faraday

In 1836, when Henry Knott was concerned about the effects of the Trinity House ownership of the South Foreland Light on his job and his domestic life, the Elder Brethren approached an eminent scientist of the day named Michael Faraday and asked him if he would consider becoming their advisor on scientific developments. Already deep into his researches, he would not accept the position as a matter of business. As a matter of kindness, however, he could not refuse it. He felt the claim of the great beacons which guide the sailors in safety across the seas deserved the best that was in him.

For thirty years he held that appointment and the services which he rendered were as varied as they were extensive, ranging from investigations into new optical apparatus and new methods of lighting, to the testing of samples of burning oil and reporting on the quality of wicks. Before the end of his life he had the great satisfaction of seeing his own discovery of electromagnetic currents employed in lighting the lanterns of lighthouses.[12]

If it were possible to re-run a video recording of the occasion in 1859 when Michael Faraday visited the lights, it might have looked something like this:

Henry Knott was overawed at the prospect of meeting this great man of science who was coming down from London to be shown around his lighthouse. They were almost the same age. [13] But their careers had been very different, and what was it that he was going to do? Electric light – they said! All the keepers were gathered in front of the High Light with their wives and children as the carriage drew up outside the main door to the tower. As Michael Faraday carefully stepped down on to the drive, Henry took two paces forward and with his hand extended, welcomed him to the South Foreland Lights. He was a tall, dignified gentleman and he removed his fashionable stove pipe hat to acknowledge the ladies present. Without thinking, Margaret gave a curtsey as he bid her 'Good day', but a faint smile that crossed his face was intended to comfort and not to embarrass her. It was obvious that he was ill-at-ease with his tall hat and he passed it to the coachman for safekeeping. Catherine noted how tired he looked and his skin had a strange, grayish pallor, but he was a man of few words and he was anxious to inspect the light tower and its facilities. As Principal Keeper, this was Henry's task and as they climbed the circular, iron stairs to the lantern, they saved their breath until they had reached the top. Faraday then explained that it was his intention to install a machine that would make electricity to create a light – a generator he called it – but although he respected Henry's knowledge as a light keeper, he realised there was little point in further explanation.

Throughout his visit he continuously scribbled notes into a pocket book interspersing them with rough sketches, occasionally asking a question and writing down whatever Henry replied. He spent a long time in the lantern, before visiting the lamp room and then returning to ground level. He walked around the lighthouse several times, looking at it from every possible angle. He stared at the French coast and asked Henry how well the French lights could be seen. Then he surprised Henry by accepting an offer of light refreshment in the cosy comfort of the lighthouse kitchen.

When Michael Faraday took his leave of the Knott Family and shook Henry Knott by the hand, he said by way of an afterthought, 'My assistants will bring all the equipment that they will need. There will be nothing for you to do' and with that he mounted the steps of his carriage and as soon as he had settled into its plush seats, it swept him away down the drive heading for Dover. [14]

Perhaps the saddest part of the Faraday story is that his demise has been attributed to his lighthouse work. According to his biographer Thompson:

> *"His devotion to the practical applications of science is attested by his untiring work for improving the lighthouses of our coast. It is believed that his death was accelerated by a severe cold caught when on a visit of lighthouse inspection during stormy weather."* [15]

A New Light In Cornwall Brings A Shock To The Family

The first keepers who climbed onto Godrevy Island, off Cornwall's north coast, on a February day in 1859 have not all been identified for the simple reason that the Enumerators for the two census returns for this light – 1861 and 71 probably avoided or omitted to visit the island.

One keeper has been found by other means. He was Charles Hood from Kingsdown in Kent and close to the South Foreland, but he was not from a seafaring family. He had been born in April 1833 and in 1858 he married Elizabeth Knott at St. Margaret's at Cliffe in Kent on the 19th July. Elizabeth was the daughter and sister of our own family of light

12 Crowther, J A: "The Life and Discoveries of Michael Faraday", (1920), p53. Various reprinted editions now available.

13 Michael Faraday was born on the 22 September 1791 and died 25 August 1867 at his home at Hampton Court.

14 This is a fictional reconstruction of Michael Faraday's first visit to the South Foreland Lighthouse

15 Thompson, *loc cit*.

keepers on the South Foreland Lights, Henry 2 and George Knott. What happened next is a story of confusion and sadness.

The Godrevy Light was lit on the 1 March 1859 with Charles Hood as one of its first keepers and his wife Elizabeth had just fallen pregnant. Her baby, a son, was born in September, and at his baptism in St. Ives Parish Church the register suggests that she was living on the island with her husband in the absence of any other formal accommodation in the town. Baby Richard Henry Hood did not survive the ordeal beyond 18 months and he was buried in the town's churchyard on the 7 February 1861. Elizabeth did not take easily to this loss and in spite of the enormous distance of more than 350 miles and the need to travel on four different railway company's trains, she returned home to the South Foreland Light.

Six weeks after standing beside the grave of her son, she was being lowered into her own grave on the 22nd March 1861 aged 35. This serves as an example of the extreme stress that could be experienced in families that chose to work for the lighthouse service. It could be idyllic, but it could also drive people to their grave.

Charles Hood was now a widower who had lost his first son, but he did not let that burden him. On Christmas Day 1862 he married 27 year-old Martha Tonkin in the St. Ives Church and they went on to have two children while he was keeper at the Godrevy light.

The Lights Shine Out On Census Night

Not many people were awake and working at midnight on Saturday 7th April 1861, but at South Foreland it was business as usual. I have no doubt that, as Principal Keeper, Henry Knott took his responsibilities towards the station very seriously. He would have done his best to see that the forms were correctly completed for the Enumerator to collect, for there had been a lot of changes at South Foreland since the last census ten years previously.

The record that remains shows the lighthouses placed between two farms covering an area of over a thousand acres between them. Bere Farm was listed before the Upper Light and at 755 acres was the largest, where Gilbee Easter employed eight men and seven boys. Wanston Farm was recorded after the Lower Light and its 280 acres were worked by a 64-year-old widow named Anne Elwick with the help of eight men and two boys. These farms were two of only five farms mentioned on the Tithe Map of 1825.

Unfortunately someone omitted to differentiate the lights as 'Upper' and 'Lower' and had it not been for Assistant Keeper Richards adding that he was the keeper of the Lower Light, it would never have been known exactly who was where. However it is blatantly clear that each residential unit was treated as an independent, separate house and there was no hint of 'sharing' the accommodation. The lighthouses were home to nineteen people: nine of those were aged less than ten years old, the youngest being just twelve days old.

John and Sarah Griffiths

The first keeper recorded in 1861 was John Griffiths and he had Sarah with him, his new wife of one year, but already there is an addition to the family. Fitzgerald was born in February and was just two months old. Fitzgerald was a very unusual choice of forename and only three others were recorded in the entire GRO Births Index for 1860-62. Could this be a situation similar to the choice of 'Warner' as the middle name for Frederick Knott? Was Fitzgerald named after someone who had been working at the light?

John and Sarah probably occupied the house at the High Light that had been home to John and Matilda Knott until John's death in 1851, so what had happened to Matilda since her loss? It took some time to find her, but Matilda had reverted to her maiden name of Goldsack. She had become the innkeeper at the *Red Lion* in the village and her father Thomas, who by now was 74 years old, had gone with her.[16] She was not unfamiliar with the public house trade for in 1841 she had been a serving girl to a relative, John Goldsack, in what was probably the *Red Lion*, but not named. However, towards the end of 1861[17] she married Edmund Baker Hills of Broadstairs and he became the 'Licensed Victualler.' They continued as 'mine hosts' of the *Red Lion* for more than twenty years,[18] but by 1891 they had retired to Rose Bank in the village, whilst Edmund continued working as a house painter.[19]

The other house of the Upper Light contained the growing family of George and Catherine Knott and this snapshot captures them just before they move to Plymouth with George's promotion to Principal Keeper and his appointment to the Eddystone Light.

16 1861 RG09/547 Folio 61 p29.
17 GRO Index 1861/4Q Canterbury District.
18 1871 RG10/1008 Folio 52 p4 and 1881 RG11/1002 Folio 55 p16.
19 1891 RG12/742 Folio 67 p16.

All the children were there – six of them including little Anne Dixon Knott, who had been born on the 26th March and was less than 2 weeks old. It is no surprise, therefore, to find Eleanor Craw, a local girl, living in as a 'servant' – Catherine would have needed some help. Little Anne was baptised in the parish church at St. Margaret's on the 21st April 1861, and provided further chronological evidence that George had not yet moved the family to Plymouth.

The next entry in the census record was disappointing for its lack of clarity. If my understanding of the accommodation at the two lighthouses is correct, then Henry and his family occupied the Lower Light, but Henry neither stated that, nor did he describe himself as the 'Principal Keeper.' Henry's family was comprised of his wife, Margaret, and his mother-in-law, Sarah Arnold, together with his second child, Anne Maria, but where was Henry Needham Knox Knott aged 12 years old? There is no answer to that question. He is easily traceable in Dover from 1871 to 1901, but in 1861 when he should have been readily found in someone's care, he is missing from the record.

William and Elizabeth Richards

Next door to Henry was his comparatively new Assistant Keeper, William Richards with his wife Elizabeth and their baby daughter Cecilia, not yet one year old. William had probably been born at the West Usk Lighthouse in Monmouthshire and he was baptised in the local church of Wentlooge, St. Bride on the 30 March 1823 to Roger and Elizabeth Richards. His father was and remained Principal Keeper at the Usk Light until sometime after his 72nd birthday in 1851, and not long afterwards his son William decided to give up his carpentry trade for the Trinity House Service. South Foreland could have been his first light and his daughter was born there in mid-1860. She was baptised Cecilia Elizabeth in the parish church at St. Margaret's on the 24th June 1860 and that event pointed backwards to William Richards' marriage. He married Elizabeth Redgewell Nugent in Ramsgate on the 6th October 1857, so he had been in Kent for some time before settling into the routines at South Foreland.

These were the four families that occupied the South Foreland Lighthouses on that, the first weekend in April 1861 and this was the last full year on the light for George Knott, the light he had known all his adult life. Soon he would be dealing with the rigours of a rock lighthouse.

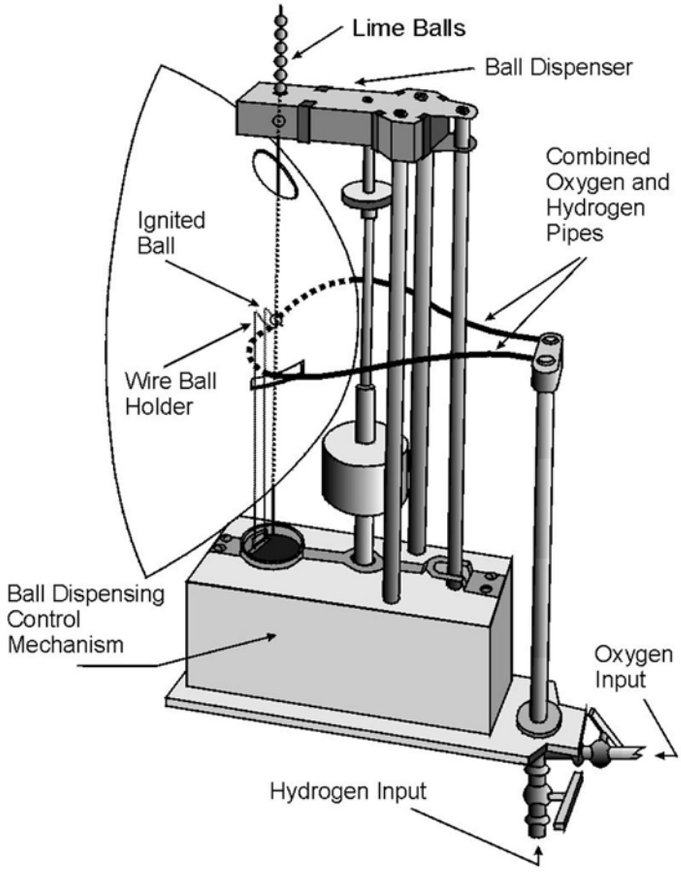
The Limelight At The South Foreland

Following Michael Faraday's attempts with electric light in 1859/60, the *Kentish Gazette*[20] published a lengthy piece on Tuesday 24th September 1861 which described in some detail the objective of the next experiment with a light source. It clearly states that the light was fitted with a Fresnel lens.

It was two years later before the *Kentish Gazette* followed up this article on Tuesday 20th October 1863 with the following summary of the results of the experiment. Indeed, it does more than that, as it clearly explains who 'Drummond' was and why he was using lime light. It reports the difficulties that had to be overcome in continuously mixing the two gases to provide 'continuity,' whilst at the same time being aware of the inflammable and destructive nature of the gases in an enclosed space. It also gives us a statement from Henry Knott's own hand... but was it Henry or was it George? Henry was illiterate in his younger years. Had that changed? Perhaps his words were dictated to a reporter.

> *"On a headland some 3½ miles eastward of Dover are two lighthouses, well-known as the Upper and Lower South Foreland lighthouses. The Upper Lighthouse, which is fitted with a Fresnel apparatus, was recently the scene of Professor Holmes's experiments with electric light. This light was removed some 18 months ago, and has now found a place in the lighthouse at Dungeness."*
>
> *"In an apparatus specially prepared for its reception, the upper lighthouse at the South Foreland has now been selected by the Trinity Board for the exhibition of a lime light, for which a special contract has been entered into by the Universal Lime Light Company. This light was placed in the lighthouse on the 26th of last month (August), and, having continued to burn brilliantly, as we are informed, and steadily ever since its erection, it may now be held to call for some special notice."*
>
> *"For the benefit of those not informed on the subject, we give a short description of what the lime light is. The light is obtained with the ignition of a piece of lime by submitting it to the intense heat evolved by the compound flame of hydrogen and oxygen gases in the proportions in which they form water. The lime does not burn, but simply becomes brilliantly illuminated, without undergoing any chemical*

20 *The Kentish Gazette*: Tuesday 24th September 1861, p7.



ABOVE: American pharologist Tom Tag provides us with a good description of this excellent but ultimately impractical (for lighthouses) invention by Thomas Drummond.
"The Drummond Lime Light is produced by two jets of gas, the one of oxygen and the other of hydrogen, ignited upon a ball of lime (calcium oxide) measuring only three-eighths of an inch (9.5 mm) in diameter, and placed in the focus of a parabolic reflector. Its light is equal to about 264 flames of an ordinary Argand lamp used with the best sperm-whale oil. It bears the name of Lieutenant Thomas Drummond, Royal Engineers, who first applied it in the focus of a parabolic reflector for geodetic purposes, and afterwards proposed it for lighthouses. So intensely brilliant was this light, that in good atmospheric conditions, observers could see their shadows at about 13 miles from the lamp. The lamp with a 21-inch reflector produced an estimated 92,000 candlepower. In 1868, the American Lighthouse Board tried using the Lime light and reported on its usefulness as follows:'The Lime light required much labor, there was danger associated with the production of the gases used, it required expensive apparatus, and the liability of the lime to become deranged far outweighed any advantages in the way of superior illumination, which could be derived from it.' The Lime Light was never used in lighthouses, other than during trials, due to the great difficulty in keeping it operational for any extended period of time."

change. This light, therefore, is independent of the atmospheric air, and does not deteriorate it. The light produced is the most intense known, with the exception of the electric light, from which it differs, however, in some important particulars."

"It is steady and continuous and its volume may be increased at pleasure. Drummond was the first who applied the lime light to purposes of practical utility, and by his experiment it was shown that its range was practically unlimited, for he connected the shores of Wales and Ireland, by the light at Holyhead, a distance of 64 miles, and afterwards obtained a like result at the summits of Ben Lomond and Knock Layd, a distance of 95 miles. His light, however, wanted these two special properties – volume, without which no light is adapted to the means at present possessed for its distribution; and, secondly, continuity, which he could not command. For these reasons it was condemned by Stevenson as unsuitable for lighthouse purposes. In fact, with the appliances then obtainable, he could come to no other conclusion, the duration of the light being under no control."

"Both these difficulties, we understand, have been overcome by the ingenuity of those who have followed in the wake of Drummond, for the volume can be readily increased so as to meet every practical necessity; while the complete control over its continuity, and the facility with which it can be permanently maintained, have been fairly proved by practical experiments." [21]

Change Comes To South Foreland

Henry Knott was 65 years old at the beginning of 1862, so it came as a shock to learn that his son George had not only been promoted to Principal Keeper, but also had been drafted to the most famous lighthouse in the world – Eddystone. Although he was delighted with his son's promotion, he was used to having him around. He had always been there – they had worked together now for fourteen years – and there were all the grandchildren. He would miss them. The exact date of George and Catherine's departure is unknown and so is the name of the light keeper who relieved him. Henry's other two assistant keepers had both seen their first children born at South Foreland within the previous twelve months, so they were settled enough to continue for some time yet, but someone relieved George. Who was it?

21 *The Kentish Gazette:* Tuesday 20th October 1863.

Sometimes it is possible to use the next census, in this case 1871, and work backwards using the births of children that occurred on the station and this method did produce some limited success. I was able to determine that William Richards left with his family in about 1867 and was probably replaced by John White[22], but I was unsuccessful in naming George Knott's relief.

John White's second son had been born at Holderness in Yorkshire in 1864 and that is almost certainly where the family lived whilst John manned the lighthouse at Spurn Point at the mouth of the River Humber. It appears that Spurn was his first lighthouse following his training at Blackwall where his first son had been born. However the outgoing keeper – William Richards and his family – found themselves in Northumberland on the Inner Farne Islands with its unique lighthouse community that still included one of the Darling family, but it was a bleak and unforgiving place and not everyone survived a posting there.

The South Foreland Lights were now about to be used for another series of experiments, and although the fact has been recorded, the detail has not. We know that at this time a new type of oil – colza oil was coming into use. Colza oil was extracted from a plant closely related to the rape seed plant which was grown and used extensively in Europe for domestic lighting before coal gas. It was also used successfully in lighthouses, in conjunction with Argand burners, and these were fitted to the Lower Light at South Foreland. It was used widely in the Canadian Lighthouse Service mainly because it was much more economical than sperm oil, extracted from whales. The Canadians visited South Foreland in 1884/5 to watch experiments with light sources, but the detail is unknown.[23] Canada is today the world's largest producer of this oil, known as 'Canola' oil.

Experiments were carried out with gas as a fuel for lighting. At this time, petroleum gases were less common than town gas, which was made from coal, but vapourized paraffin was also used. This needed a considerable amount of apparatus to function correctly. Lighthouse engineer, Kenneth Sutton-Jones wrote:

> *"The paraffin was fed under pressure through vaporising tubes into a retort below a mantle. A small methylated spirit burner was used as its temporary heating source, and this was lit under the retort. When the oil turned into a fuming white gas, it was lit above the fine meshed mantle to produce a homogeneous light. This uniform illumination was far more compact than the multi-wick burner with a higher luminance. Some of the heated gas returned down a separate 'Bunsen' pipe, located close to the vapourising tube and maintained a production process automatically."* [24]

I have already said that the light source experiments during the mid-1860s have not been accurately recorded and the two I have described are conjecture based upon vague contemporary statements, but they had to happen at some point in the evolution of light technology. We must also ask what effect this frequent and continuous change had on the Principal Keeper of the South Foreland Lights? Henry Knott was that Principal Keeper and he was an old man. How did he cope with this change without his reliable son George? Life was becoming difficult and it was about to get worse.

Anyone Can Be Replaced

Occasionally in life, even today, men can be found who are totally dedicated to their work. They do not see it as work. They see it as a way of life. Henry Knott was one of those men. When he reluctantly conceded that the Knott family tenure of the South Foreland light was over it might be said that there was nothing left to live for. It often happened. He had been born at the South Foreland Light. His father and grandfather before him had been its keeper. He had married not once, but twice and brought his spouse to the light. His children had been born at the light. Some even died at the light. He knew nothing else. Yet men like Henry forget that they are mortal. They have no control over their span of years, neither do they have control over their work, but too often they believe that no one else can do the job, yet life carries on.

In the 19th century retirement was a word barely used. There was no retirement age. Men took paid employment until they could work no longer. Some were lucky enough to be working for an institution that awarded an annuity – a few pounds per year – but men rarely lived long enough to benefit from it. Henry was one of those men. After a lifetime on the light, he had been the third generation and had helped to accumulate over 130 years of service in one place. There was no one left to follow him.

22 Bertha Richards registered Dover 4Q/1865 and James White registered Dover 1Q/1868.

23 *Whitstable Times & Herne Bay Herald* Saturday 23 August 1884. Canadian scientists observe South Foreland from *TY Argus*

24 Sutton-Jones, Kenneth: "To Safely Guide Their Way", p31/32.

Trinity House would not have allowed it. It was now against the rules (but there was nothing to prevent them coming back at a later date).

I have often wondered how it was decided who should be appointed to which light. If it was anything like my experience when I joined the Admiralty's Royal Dockyard at Devonport in 1957, it was a lowly clerk somewhere in a comfortless room with a card index that he periodically shuffled around. However, assembling data is a modern phenomenon and assembling the censuses for every single lighthouse does produce a loose pattern unlike the one I have suggested from earlier years. Keepers were grouped around regional depots and Lighthouse Superintendents who organised their every need. South Foreland was half way between East Cowes to the west and Harwich to the north. Keepers largely stayed within their own region, unless of course they expressed a preference or volunteered for something different. Hence we find that Welsh lights were firmly divided between north and south. Lights in South Wales took men from Cornwall and Devon, but not North Wales. It is therefore always interesting to see a keeper's last light and his next light, yet I must emphasize that it was not entirely black and white.

New Keepers Take Up Residence

It appears that 1867/68 was a watershed for South Foreland as it transformed further into a test bed for lighthouse innovation. Not every keeper was enthusiastic about that situation. It was in the nature of a man to accept routine, and the flip side of that stance considered change to be anathema. Inevitably a few men enjoyed change and it is apparent in the following text that the keepers who began to arrive at South Foreland were willing to embrace change. They wanted to be a part of the new developments and to learn and to see what the new ideas could do. It also becomes clear that innovation brought engineers and these were the men who took charge of the light. The Principal Keeper became a figurehead and not all PKs were happy to accept engineers in their domain.

George Thomas

George Thomas was probably the first to arrive. He had proved to be a sensitive man who has already entered our story twice before. He was the ideal choice to look after the interests of six assistant keepers and he was the perfect choice to replace Henry Knott in his 71st year.

It is worth pausing for a moment to consider the residential arrangements which in 1871 were now very different from those which had existed in previous years. Once again, the Enumerator has failed to differentiate each residence so I must attempt to walk with him from the village (his last call) to the bay (his next call after the lighthouses).

I think it likely that George Thomas occupied the Upper Light as Principal Keeper, but it was an unusual household. He not only had two lodgers, an unmarried light keeper, and an engine fitter from Dundee, but also his 6-year-old grandson. There was no woman in the house, yet they needed a housekeeper, and no attempt had been made to send young Robert to school, as can be seen from the school's admissions register. There were now 15 children on the lights, but not all of them were of school age.

Robert Hurst

The keeper boarding with George Thomas was 28 year-old Robert Fearman Hurst who not only came from Ramsgate as George did, but he had followed him up from Cornwall where he had been George's Assistant on Godrevy Island. He stayed at South Foreland until 1879 before moving up the coast to the North Foreland. (He was there to meet George Knott on his arrival from Bull Point in 1888 and they left together in 1890. Robert went to Flatholm, off the South Wales coast and George moved to Dover on pension.) However, there certainly seems to have been a desire between George Thomas and 'Bob' Hurst to work with Henry Knott, whom they had not met before but must surely have held in high regard for his long experience of the 'old times.'

The twinned residence at the light was taken by John White who had probably arrived from Yorkshire before any of the others. He had already produced two children at South Foreland, the first arriving at the beginning of 1868 and this was very likely to have been the first record of him in Trinity House service at a census. John had been born in 1839 at Blackwall on the Thames and the site of the Trinity House buoy wharf and training lighthouse, but his wife came from Stowmarket in Suffolk.

Their house was also home to Thomas Michell, who was not a light keeper but a house carpenter. As a boarder in a lighthouse it is unlikely that he was simply a casual, unmarried man looking for board and lodging. His trade suggests that he was employed on the additional accommodation and

that they were wooden huts of some sort, but once more it is unfortunate that the Enumerator failed to leave a clear picture of the position and arrangement of that accommodation for the additional keepers.

The Man Who Built a Lighthouse

The next family the official encountered on his data-gathering tour was the Williams family who may have occupied one of the huts in question. It seems they arrived during 1869 because a child named Clara, reportedly born on Scilly in 1868/69, does not appear in the GRO Index.

John and Elizabeth Williams

John Williams, born in Cornwall at St. Enoder in 1822, had been in the light service for almost a decade. His wife Elizabeth was also Cornish having been born in St. Just in 1827. They had a large family whose births were recorded either at St. Just in Cornwall (1845, 47 & 51) or St. Mary's on the Scilly Isles (1849, 53, 56, 59, 66 & 69) when John was on the Bishop Rock Light. This length of time on a rock light is most unusual during Trinity House's administration, but everything about John Williams was unusual. It might even be said that he 'was a man who had built his own lighthouse...'

John Williams was baptised to John and Grace Williams, a labourer and his wife, of Chiprase St. Enoder on the 6 March 1822. It was 40 miles from St. Enoder to St. Just in Penwith, almost half the length of Cornwall, but there was no future on the land. Cornishmen were intent upon burrowing into it for its hidden wealth. Tin, copper, china clay and granite, all lay beneath the surface. Yet John Williams had grown up outdoors, surrounded by open fields. He did not want to be a prisoner of his work: he wanted to retain his contact with the wind and the weather. How he came to be a stonemason will never be known, but St. Just was the place for employment - lots of it, building engine houses, sheds and stables. John married Elizabeth Gibson in the parish church of St. Just in Penwith on 2 November 1844 when she was only 17 years old and he was 23. Both lived in Church Town where her father was a coastguard, yet her husband was a mason and he was not content to stay in St. Just. Towards the end of 1848 John and Elizabeth were on St. Mary's in Scilly, when their third child was born. It is unclear what work had attracted John to the islands. We do know that a small facility was built on Rosevear in 1847 for the men building the new lighthouse on the Bishop Rock. Situated on a bare, jagged rock just a few metres above high water some 2.5 to 3 km east of the Bishop, living at this base saved a great deal of travel time compared to rowing the 7 km to the nearest island of St. Agnes. Remarkably, the crude base camp included a dormitory, mess, workshop and forge. There were times when the men could not get off at all and were forced to eat limpets. Was this what had brought John Williams to Scilly and how had he known about it?

James Walker was a man familiar with the moods of the weather. He had to be. He was a lighthouse engineer and at the end of the working season of 1849 he had just finished an unusual screw pile lighthouse using only metal legs and bracings. He knew that the six dark months of the year could easily generate 30 storms. He also knew that the winds could exert 7000 lbs per square foot pressure on his lighthouse, but he thought that the seas would wash right through its open structure. He did not expect the weather to destroy it.

On Tuesday 5 February 1850 a storm arose that reached its peak before midnight. When morning broke on Wednesday, the light was gone. Everyone wrote that it had been washed away, but the keepers on the Longships told their agent at their relief that the sea state on that day had been favourable. Their own lighthouse had stayed dry, as neap tides had taken much of the force from the sea. It was their opinion that the structure had been blown away. Yet, had it not been for that violent storm, John Williams would never have become a light keeper.

By July 1850 Trinity House had decided that the lighthouse would be built in stone and several workmen had arrived on St. Mary's to begin preparations. The first stone must have been laid during 1851, but where Walker wanted to lay it was 1 foot (30 cm) below the low water mark, so he had to build a coffer dam around the base so that the masons could work fast and continuously without interference from the sea.

At the 1851 census John Williams was in the care of a landlady as his wife had returned to her parents' home for the birth of her fourth baby, but the census does not highlight any particular concentration of stonemasons on the island. Now that work was under way, a work yard had been established on St. Mary's where the stone was dressed, trial-fitted and numbered, and there must have been occasions when John worked there. The foundation stone was laid on the 14 July 1852 and this stone was very likely to be several courses above

the first - somewhere convenient for a dignitary to officially mark its presence.

Between 1853 and 1859, John and Elizabeth Williams added three daughters to their family born on St. Mary's. During that time the lighthouse builders completed the lighthouse with 2,500 tons of granite blocks each weighing from 1 to 2 tons and transported to the Rock on a barge built on Porth Cressa beach which began its work on the 5 June 1853.

The lamp was lit on the 1 September 1858, and long before that day arrived two semi-detached cottages were built on St. Mary's to house the families of the four keepers who would arrive to keep the light. Those cottages were also built of granite, and the site chosen for them was on the Garrison, facing the lighthouse that was about seven miles (11 km) to the southwest.

John Williams had ample opportunity to work in the dressing yard, on the lighthouse and on the Bishop Cottages, as they became known, but his ambition had changed. He wanted to be a light keeper and he wanted to be the first keeper on the Bishop Rock. He had so impressed the supervisors of the project with his attitude that they granted his request and broke all the rules that the Trinity House was trying to put into place. He probably left the Bishop Rock during 1869 after 11 years on the tower and it is suggested that he had stood down from being the Principal Keeper at his own request. South Foreland was now the responsibility of George Thomas, but his later dialogue with Major Elliot (see p204) suggests that John Williams had something of a charismatic presence among the lighthouse fraternity which never failed to impress.

John and Jane Watson

As he left the Williams household, the Enumerator passed one 'unoccupied residence' before recording the names of John Watson and his wife Jane (née Hollow) without recording that they had a residence. John and Jane had only just married six days before at Sennen, which tells us that John had been serving on the Longships, his first lighthouse, and it might even be said that they were now on their honeymoon. So, it is possible that the Enumerator should have included John and Jane within the Williams Family, not as lodgers, but as a separate household. It would have made sense as Jane Watson adjusted to a light keeper's life at the age of 22. Yet the fact that he has placed an unoccupied residence between them and the Williams family draws a curtain across a logical explanation.

The End Approaches

Tucked away in a small book of 1910 describing the history of the parish of St. Margaret's at Cliffe is the following statement:

> *"In 1869 the land between the lighthouses was acquired for the erection of buildings and engine houses, workshops and living accommodation for three keepers and in 1872 the South Foreland Upper Light was the first lighthouse in which electric light was permanently installed with a 150,000 candle-power light."* [25]

Now, that is an all embracing moment in history. It excites the imagination, but gives little detail and does not even mention its source. So let us examine it in relation to Henry Knott's situation.

The family stories of our lighthouse keepers have always been told in the assumption that each keeper worked until he died, handing the mantle on to whichever son was willing to take on the task. However, 1869 was almost thirty years after Trinity House had superimposed their ownership and their systems on the major lighthouses of our coast. There was now a hierarchy of rank and promotion. Only Trinity House employees could live in a lighthouse. So, the family tenure had been broken. All the younger Knotts in the service had gone. Only old Henry was left at South Foreland, but had he retired? If so, he would not have been allowed to continue living in the light. Yet he had been born there; it was the only home he knew. He would also have had to hand the care of the lights to another Principal Keeper. So what are we to make of the statement that in 1869 accommodation was to be built for even more keepers? Henry would not have been able to cope with six keepers, none of whom he had met before.

My suspicion proved to be correct. Henry Knott died on Thursday 7th July 1870. His death certificate[26] revealed that he had not died at the lighthouse, but in St. Margaret's Bay. Exactly where is not stated, but present at his death was the new Principal Keeper George Thomas. These two facts together not only prove my theory but also raise a number of other questions.

Henry died of apoplexy. The dictionary definition of this word states that it is a 'sudden loss of consciousness', and it goes on to say that

25 Jewell, p12.

26 First seen on the 23rd February 2013.

this is often associated with a stroke. Perhaps Henry had been suffering from the stress of his position which began with the official experiments of 1859 and was compounded by the departure of his steadfast son, George in 1862 when Henry was already approaching 65 years old. The certificate describes him as a 'superannuated light keeper' - contemporary parlance for being retired on a pension, although in those days there was no statutory retirement age. The final act of leaving the lighthouse for the last time, possibly in 1869, was a step too far and Henry's fate was sealed.

So, indeed, Henry had been obliged to leave the lighthouse on his retirement. He had also met and befriended his relief as Principal Keeper, but it was more than friendship that had brought George Thomas to his side. George had been the Principal Keeper appointed to the new lighthouse on Godrevy Island in 1859. One of his assistants was Charles Hood who had married Elizabeth Knott, Henry's daughter. Their first child had been born on the light seven months after it was lit and he had died there early in 1861. A grief-stricken Elizabeth came home to her parents at South Foreland, and six weeks later she was dead at 35 years of age. It was a burden that George Thomas still carried, and his presence and his actions in that short period of 1869-70 revealed a compassionate man who cared deeply for his fellow Principal Keeper whom he had never previously met.

There was even the poignant discovery that at the time of the 1871 census Elizabeth's husband Charles Hood was at the Flamborough Head lighthouse working as an assistant to Elizabeth's elder brother Henry as his Principal Keeper. They may have been together when Henry received the letter from Kent informing him of the death of his father.

One question arising from the circumstances of Henry's death has Margaret's apparent absence at its core. The death certificate merely states that Henry had died at St. Margaret's Bay and leaves open the possibility that he could have been anywhere, even walking along the beach with his friend George Thomas. It would then be obligatory for George to register Henry's death, for he was with him when he collapsed. George Thomas visited the Registrar on the 10th July (it was a Sunday) and recorded that he was present at Henry's death,

Of course those who knew the truth of the situation have taken it with them as they passed on, but my suggestion would fit the circumstances. However, if he had died in bed in his new home on the Bay, was George Thomas just visiting or had he been called? Is it possible that Margaret was too distraught to deal with the matter and had fled to her step-daughter's house in Dover (where she was living in 1871),[27] abandoning the cottage to which she and Henry had moved for their retirement.

But, where did Henry and Margaret choose to live? That is a difficult question. During the 1871 census, the Enumerator walked down the hill from the light and passed a single coastguard cottage before reaching the *Green Man* inn. Coincidentally there was a cottage on either side of that inn that is recorded as 'uninhabited.' Is it just possible that one of those cottages had been Henry and Margaret's new home? As is often the case in these situations, there are more questions than answers.

Henry was 73 years-old. He was buried in the St. Margaret's churchyard four days following his death, on Monday 11th July 1870. It was the height of summer, with its warm days and long hours of daylight and it would have been a fitting conclusion to record those who were present as he was laid to rest. Sadly that is not possible, but I would be surprised if there were not a considerable number of light keepers present to pay their respects to a loyal and long serving colleague.

Henry was the last in the line. He had been the third continuous generation in charge of the lights at South Foreland spanning more than 130 years. Henry Junior, John and George had been the fourth generation, but with the exception of John, who died on duty at South Foreland, they had been scattered around the coast. George would create a fifth generation in Henry and Edmond, and both would return to the South Foreland Lights before the turn of the century, but it was George's eldest son, Henry Thomas, who carried the torch forward to 1910, bringing the total number of years in lighthouse service to almost 170.

Henry's widow, Margaret was left without a husband in July 1870, so she was taken in by her step-daughter Mary Anne Arnold. At the census the Arnold Family were to be found at 6 St. Martin's Terrace in Dover, where Mary and her husband Richard Jarvis Arnold lived with their five children. Margaret's maiden name was also Arnold, but it is a relatively common, local name and no relationship has been established between them.

Richard was a Trinity Pilot, but he died tragically when his pilot cutter *Edinburgh* was run down by the steamship *Severn* in the early hours of the morning of the 4th March 1879. It was a maritime disaster

27 1871 Census RG10/1009 Folio 55 p25.

for Dover and left a number of families devastated, including his wife Mary Arnold and their seven children. Margaret Knott had decided to move back to Beach House at St. Margaret's Bay by 1881 and to live with her unmarried daughter Anne, who was in service, and one thinks immediately whether this was the same house in which Henry had died in 1870. It is very probable as it was next door to the *Green Man*, then in the care of George Cramp with his wife, Fanny.

Margaret Kingsford Knott died in 1886 and was buried in the churchyard at St. Margaret's at Cliffe on the 11th March aged 72, yet we have learnt very little of her earlier life prior to 1844. Clues were found in the names of the two children she had by Henry, and together with the 1871 census, a little detective work uncovered an unusual tale.

The Keeper Who Already Knew About Electricity

John and Mary Ellis

It has been said previously that it is unclear whether or not keepers were allowed limited choices on where they served. If so then I believe that John Froud (Francis) Ellis was one who wanted to be a part of the experimentation at South Foreland. Born into a family of Tresco Islanders in 1843 his working life began as a merchant seaman, living with his parents, grandmother and brother on St. Mary's in 1861. His father was a Master Mariner and his older brother was also a seaman, so the sea and its dangers were in their blood. Five years later, he married Mary Jane Higinton on 14 March 1866 in Whitechapel,[28] on the doorstep of the Trinity House Buoy Wharf at Blackwall and the place where new keepers gained their training.

Their address in Aldgate was 2 Sun Court and that suggests a small, confined courtyard hidden behind larger buildings fronting a main street, but Aldgate was also in Whitechapel. I cannot begin to explain the coincidental dates of birth and marriage, so I won't attempt it, but their marriage entry in transcript is disappointing as it does not include details of John's occupation. Their first child, Eliza, was born in Poplar on the 5th March 1866 and her registration was confirmed in the St. Margaret's school Admissions Register. This may have delayed Eliza's registration with the General Registrar's Office. This is important because it is

Top: Reaching the Bishop Rock lighthouse in the nineteenth century was hard, often achieved by rowing. The lighthouse builders needed to endure extreme difficulties, both at work and when off-duty on Rosevear.
Centre: The Western Isles are a cluster of bare razor-rocks about 3 km east of the lighthouse.
Bottom: One of these islands, Rosevear, was considered suitable for men to live on whilst they were building the lighthouse and so saving much travel time. Little now remains of their presence except the ruins of a cottage, just visible from our tourist boat.
Note: The lighthouse shown here is the later, enlarged tower built by Douglass in 1888. Our story refers to an earlier structure under Walker's direction.

28 Transcript of Whitechapel Marriage Register quotes John Francis Ellis –Findmypast website.

believed that John went to the Paris Exposition sometime between 1 April and the 3 November 1867. It must be presumed that John was representing Trinity House and ready to explain its exhibits to the visitors, but we remain in the dark about where he learned about electricity. Was it at Blackwall?

Mary Jane's record is quite elusive, as her birth registration has not been found in Streatham in 1843/44, but she was found in 1851 having crossed the river to Aldgate.[29] Her parents were Thomas and Eliza and her father was a journeyman carpenter from Launceston in Cornwall. Thomas had moved his family from Cornwall to Streatham where Mary Jane was born. That might explain the lack of registration which wasn't compulsory then.

Mary Jane, had her hands full when she arrived at South Foreland, as she had two toddling girls and twin boys, born just 11 months previously and three of them had been born at Dungeness between 1869/1Q and 1870/2Q. Dungeness was the light where Mr. Holmes's magneto generator had been permanently installed following its successful trial at South Foreland. So John's time in Paris was a precursor to his stay at Dungeness and he was now ready for more innovation at South Foreland.

When Eliza and Ursula Ellis left their local school on the 15 January 1877, the headmistress wrote in the register - 'gone to Wales.' They had, indeed, gone to Pwllheli in Caernarvonshire for John Ellis had been appointed to St. Tudwal's, a new lighthouse on an island off the coast of North Wales. Amidst great ceremony on Friday 16 February 1877 it was lit - by paraffin! However, it was fitted with the first occulting lens that the Chance Brothers had made, and they too had participated in the great exhibitions that so became popular at this time.

Another Unusual Start In Life

Frederick and Sophia Spurr

I believe Frederick Spurr was the second keeper sharing the twinned accommodation at the Lower Light with the Ellis Family. For some reason he saw himself as less important than all the others as he was the only one to enter his correct rank as an Assistant Lightkeeper on the census return. He had been born in St. John's, Westminster in 1832 and after leaving school he was apprenticed to Thomas Cribb (32) of Vine Cottage, Hampstead as a clock and watchmaker. It was quite normal for a tradesman to have only one apprentice as they lived 'all found' with the family, who in this case was Jane Cribb (36) and three very young children.[30] At the beginning of 1855 Frederick was still in London as at sometime in the early part of the year, he married Sophia Tunsley (b. 1829) somewhere in the Kensington District.

In 1861, the parish that Frederick claimed as his own was also home to William Spurr (45), a gilder. His daughter, Isabella, was described as a 'clockmaker' in spite of being only 15 years old. Their home was 80 Regent Street.[31]

Meanwhile Frederick and his family were in west Wales as Frederick served on a rock lighthouse as a newly trained light keeper. His family now consisted of three children, the eldest two had been born in the district of Uxbridge, but the youngest had been born in Milford just ten months previously. They were found in Charles Street, Steynton, Milford (Haven)[32], and their choice of residence seemed to be the one used by the families of those who kept the South Bishop light. The light was new tower in 1861, and Fred Spurr was another of this small, select group who had experience of a new light.

Three more children were born in the 1860s, the first in the early summer of 1864 in St. Merryn, indicating that Fred was serving at Trevose Head. This was followed by a spell in Plymouth, and very probably the Breakwater Light as his time on the South Bishop had exonerated him from serving on the Eddystone. A daughter, Emily, was born in North Street, Plymouth in February 1866, but died aged 5 months. Their son, Frank Alfred, was also born in Plymouth in 1868 suggesting that their move to South Foreland may have occurred around 1870.[33]

After three years or so at South Foreland, they packed their bags and moved to Haisbro' in Norfolk sometime during the latter part of 1873 where Frederick became Principal Keeper.[34] He must have been at Haisbro' for about 20 years as he was still there in 1891. Ten years after that, in 1901, when he said he was 67, he and Sophia had retired to live with their eldest son in Handsworth, Staffordshire.[35] He died in 1903/2Q aged 69 and his wife followed him shortly afterwards in 1903/4Q aged 73. Their deaths were registered in the West Bromwich District of Staffordshire, far from the sea.

29 1851 Census HO107/1524 Folio 148 Page 39.

30 1851 Census HO107/1492 Folio 355 p14.
31 1861 Census RG09/50 Folio 82 p15.
32 1861 Census RG09.4160 Folio 67 p17.
33 1871 Census RG10/1008 Folio 64 p28.
34 1881 Census RG11/1920 Folio 107 p5.
35 1901 Census RG13/2712 Folio 61 p25.

South Foreland was a light immersed in change. I have summarised the seven light keepers who were there (see p213) at the date of the Census (2nd April 1871), but more people brought more change. The six married keepers brought 15 children under the age of 18 and inevitably there would be more born on the light as the years progressed. Yet the Upper Light was now a test bed that would bring with it its own stream of visitors, some staying only for the day. One such visitor arrived in May 1873, an American called Elliot.

George Avoids A Move

George Knott was already formally recognised by Trinity House as a light keeper when he married in 1849. He was 20 years old and working with his elder brother, John, at the Upper Lighthouse at South Foreland. Their wives were sisters and enjoying each other's company in the twin cottages attached. His father, Henry, was settled in the Lower Light with his new wife of five years and life was as good as could be expected in the mid-19th century. However, the new Trinity House system was beginning to have an effect. In spite of the Lower Light having twin residences for two keepers, George was boarding an unmarried keeper from Liverpool in the Upper Light. His father's household was only four people, and the census does not show individual residences, but it is evident that the Lower Light had one empty cottage.

The two brothers' time together did not last. It would seem that from the beginning of 1851 John was unwell. He survived the census by just two days and Matilda lost her home when he died. The family she shared with her sister, Catherine, was the Goldsack family. Their father was already widowed and living in the lighthouse cottage with John and Matilda, but she now had to rely upon the family to find them a room and some meagre income. Her marriage to John had been insufficient to persuade Trinity House to agree to a small annuity.

Robert and Sarah Wood

Robert Wood could have been an assistant to Henry Knott on the Lower Light, but I think it more likely that John had been incapacitated for some time and Wood had been sent to cover his duty. George was entitled to charge Wood for the meals and washing that young Catherine would have done for him. That's not unreasonable, but there is a hint of stances being taken and unheard opinions being expressed as the lights were no longer 'in the family.'

With John's death, the situation was even more serious. A message had to be sent to the local Superintendent at Ramsgate to inform him of their changed situation. John's replacement was already in position so nothing was done. Three men remained in position and one was a bachelor.

It was two years to the day following the census when, on the 31st March 1853, Robert Wood married Sarah Elizabeth Fagg in the parish church at St. Margaret's at Cliffe. The certificate confirmed his residence as the Upper Light, but there are other entries on the register that are perplexing. His father's occupation is unreadable, but seems to include the letters 'T H' (Trinity House?), and one of his witnesses was W. A. Wood. Who was that? Robert's handwriting was very weak which suggests a poor education for someone aged 33 in Trinity House service. However there is no evidence of subsequent children being born in the parish and the name is too common to pursue.

This leaves six unexplained years – 1853 to 1859 – and there is nothing to say that the two lights were not run by just two keepers, Henry and George Knott. It could be done. It had been done before and the Superintendent turned a blind eye.

In 1859, South Foreland again began to attract the attention of Trinity House as the eminent scientist Michael Faraday had been offered South Foreland Upper Light as a test bed for Frederick Holmes' new invention, a magneto, to generate this new phenomenon called 'electricity.' The Superintendent had to quickly rectify the under-manning of the station.

George Leaves The Family Light

When John Griffiths arrived at South Foreland in 1859 he had come directly from the world-famous Smeaton tower on the Eddystone, fourteen miles out into the Channel from Plymouth Hoe. John was a bachelor, young and new to the service, and a rock lighthouse was often chosen by Trinity House as an induction into the service for new Assistant Keepers. If they could survive the rigours of that experience then these were men fit for the task. Young men were flexible enough to cope with transfers to and from the visiting tenders,and as bachelors there would be no one fretting at home when a relief was delayed.

George revelled in the stories that Griffiths told him of life on the light and was intrigued by the whole idea, but it never occurred to him that it might be possible to re-live those tales for

himself. I believe it was 1862 when George Knott was rewarded for his 14 years loyal service to South Foreland with the promotion to Principal Keeper. It was in line with the new practice that an Assistant Keeper could expect to receive promotion within 15 years, but it often came at a cost. Someone had to play Principal Keeper to a rock lighthouse with its system of two months on duty and one month off. Not everyone who was promoted was chosen, but most could expect it as their first appointment in the higher rank.

The days of light keeping invested in a family were over. George's father turned 65 years of age in 1862. What was left for him after a lifetime at South Foreland? In the future some men might manage to retain tenure of a light for as long as twenty years or so, but there would be no thought of handing it on to a son. If that son was interested enough to be a light keeper then he must join Trinity House and take his chance along with everyone else. George's eldest son Henry Thomas would discover that for himself. The new generation of keepers, their wives and families got used to an itinerant lifestyle with a new house every 3-5 years, new friends among the keepers' families and new places to laugh and play.

There was no better time to take a position on the Eddystone for the first time than during the summer months, and certainly before October. It would be my guess that George and Catherine Knott with their six children bade farewell to South Foreland and moved to Plymouth in 1862. They were certainly there by October 1863 for that was the month in which they lost Matilda. She was 10 years old and Catherine's third child.

George Knott put his confused allegiances to one side and was excited by the prospect of being in command of the most famous lighthouse in the world. That could not be said for Catherine. Eddystone, unlike Bishop Rock and the Longships did not have a cosy residential terrace with stunning views. Catherine's home was in a small residential terrace called Alma Cottages, but it was not for light keepers. Instead it looked out across Plymouth's industrial districts of Cattedown and Prince Rock. If she stopped to look carefully she might see the water in Coxside Creek, lapping Lockyer's Wharf when the tide was high. She might even see and smell the town's gasworks as it worked to convert coke into gas. It was a far cry from the open, windswept downlands of the white cliffs of Dover. True, they had their own white cliffs left by the relentless limestone quarrying that was needed for such a large township with its docks and harbours, bridges and public buildings, but it also had its smells and its noise that never ceased, night or day.

The loss of Matilda was Catherine's first experience of being alone with her loss, though their first child and eldest daughter had died just a month after the birth of Henry Thomas, back in 1851. Now with four boys, their only daughter was little Ann Dixon Knott who was their last child to be born at South Foreland in March 1861. Yet it has to be said that these very sad occasions were more readily accepted in those days than they are today.

New Surroundings, New Colleagues

It is too easy in this modern world to underestimate the emotional impact that a change of this nature had on the Knott family. They had no experience of a large town and where they had found themselves living was very industrialized. This was not quiet St. Margaret's at Cliffe with its single road through the village where the children had open downland on which to play and Catherine had no concerns for them. This was No.2 Alma Cottages, Cattedown in a district teeming with horses and carts that made it too dangerous to cross the roads, filthy with dung. There was not even a plot to grow vegetables, only a yard where the privy was found. Had she wished she had never come? Probably, but she was as resilient as any light keeper. Where George went, she went. It was as simple as that.

Catherine soon discovered that Alma Cottages were also home to Thomas Ditcham, the local Superintendent of Lighthouses, so although there were no wives of light keepers to act as neighbours there was Rebecca Ditcham in No.6. All the other cottages seemed to be home to a variety of 'the better sort of people.' Master mariner, ship surveyor, insurance agent and clerks were all represented so the children had their instructions to 'mind their manners,' when out in the street.

George's mind was on his new task, or rather his new responsibility, and his first duty was to meet his new superior officer, Thomas Ditcham, who would acquaint him with the names of his lighthouse colleagues and explain to him how and when the relief of the Eddystone lighthouse was accomplished.

Trinity House had a tender based in Plymouth called *Diligent* whose master was Giles Hopkins with a four-man crew. George and Giles would get to know one another well. It is to be hoped that his crew was more competent than the one encountered by Captain Welbanks during his inspection in 1836

when the only man in the crew who knew what he was doing was a superannuated gunner from the Royal Navy.

Unfortunately the 1861 census return for the Eddystone has been lost, so it is not possible to say who was on board on that night in April. However two men were found who were not on duty and who did not specify their light station. They didn't have to do that, but the man on shore from the Breakwater did, so by elimination we might assume that they were keepers from the Eddystone. Inevitably they were living within half a mile of Charles Church and close to the Barbican's Sutton Pool. Joseph Steer lived in Radnor Street and Charles Jolin lived in Jubilee Street.

Charles and Emma Jolin

Charles Felix Jolin married Emma King in Shoreditch on the 12th October 1856 and they were still there in the spring of 1860. They had already had two children and their second, William Felix, was buried in the Victoria Park Cemetery, Hackney from Moneyer Street on the 11th June 1860 aged 16 months. This locality might suggest that he was working at the Blackwall Buoy Wharf of Trinity House, but not yet decided to be a light keeper as three years is too long simply to be under training. Their third child, Maria, was born in February 1861 in Jubilee Street, Plymouth just prior to the census finding them there when Maria was little more than a month old.

Joseph and Sarah Steer

Joseph Steer came from a most unexpected place – Bovey Tracey in 1831. He married Sarah Manley towards the end of 1855 and had two daughters born in Bovey Tracey in 1856 (Hephzibah) and 1857 (Rhoda), but it seems unlikely that he and George met at the Eddystone as his wife presented him with a daughter, Tryphena, in Harwich at the beginning of 1862. This was followed by appointments to Dovercourt, Guernsey and Start Point by 1871.

The Romance Of The Most Famous Lighthouse In The World

George Knott's appointment to the Eddystone came about three years following its centenary in 1859. There was no comment in the newspapers regarding that important date and its Principal Keeper at the time may have been William Cock, a Plymouth-born man. At the census in 1861 he was Principal Keeper on the Longships, but we do not know who was Principal on the Eddystone in 1861. Occasionally there were inevitable gaps between appointments, but it is unlikely that it extended beyond several months.

This was the period when the life of a light keeper was romanticized in literature, particularly those employed on rock or island lighthouses. Victorians loved an excursion and George would get used to seeing the continuous stream of paddle steamers from as far away as Exeter circling the lighthouse in the summer months with hundreds of passengers gazing incredulously at his place of work. The lighting of the lamp for the first time on the Smalls (see p274) on the 1st August 1861 inspired many words. The location had a particularly dramatic history and the public could never quite understand how someone could live in such hazardous isolation. The following contemporary description was relevant to most rock lighthouses:

> *"You are to light the lamps every evening at sun-setting and keep them constantly burning bright and clear until sun rising – that is the first article of your instruction. Whatever else happens, you must do that. You may be isolated through the long night watches, 20 miles from land and 100 feet above the sea with the winds and the waves howling about you and the seabirds dashing themselves to death on the gleaming lantern like giant moths against a candle. Or it might be a calm moonlight night with the soft land airs laden with the perfume of Cornish gorse tempting you to keep your watch outside the lantern on the open gallery instead of in your watch room, chair with-in. The Channel may be full of stately ships guided by your light, or the horizon may be bare of all form of life except the lantern of some fishing boat at sea far below you. Whatever may be going on, your moral duty is to light the lamps every evening at sun-setting and keep them constantly burning bright and clear until sun rising."* [36]

The author then added an important insight to the light keeper's training that George had never experienced except under the guidance of his father, Henry. What was amiss was that South Foreland was only one light. Service with Trinity House demanded that keepers be adaptable enough to maintain any light. The author continued:

> *"On probation at headquarters, you will gain familiarity with all the materials – lamps, oils, wicks, lighting apparatus and revolving machinery. You will be looked at, over and through by keen medical*

36 Anon: "Life in a Watch Tower", *Cornhill Magazine* (1861).

eyes before you can be admitted to the service, lest under the exceptional nature of your future life you should breakdown to the public detriment and yourself. You shall be encouraged in the constant habit of cleanliness and good order and to the invariable exercise of temperance and morality so that by your example you may enforce the same laudable conduct in your wife and family."

This précised paragraph exudes religious discipline, and throughout the remainder of the century the life of a light keeper and the image of a lighthouse found constant parallels in the material of many religious societies. Our writer then continues the watch as follows:

"He whose watch is about to end is to trim the lamps and to leave them burning in perfect order before he quits the lantern and calls the incoming watch and he who has the watch at sunrise, when he has extinguished the lamps is to commence preparations for the exhibition of the light at evening sunset and moreover, no bed, sofa or other article on which to recline can be permitted either in the lantern or in the room under the lantern known as the watch room.

"At such places as Forelands or Flamborough there are gardens to cultivate and much land room for men to stretch their legs after the night watches, where visitors and neighbours are constantly coming and going to talk and to listen, even to praise for what you do. But there are places remote, unfriended and melancholy where the walk is restricted by the circle of the gallery railing and the only incidents are the inspections of the committee or the visits of the local superintendent or the monthly relief which takes the men back on shore. At these stations when the sea is making fun of them by sweeping over the lantern roof – in calmer weather men may creep out upon the rock to comfort themselves with a little fishing, or if a little nervous, to do what Winstanley had done and to fish from the security of the kitchen window.

"You will be well paid while you are hale and active and well pensioned when you are past work. You will be enobled by compulsion into provident consideration of your helpmate and children by an insurance on your life."

This text has been considerably reduced and modernized in an attempt to retain the tone of the passage that conveys the Victorian attitude to discipline, and a modest incredulity that anyone should commit to such a simple task in such demanding conditions. It also includes, coincidentally, two situations that George encountered during his time on Smeaton's incredible tower, which will become clear later.

Life On The Eddystone

It is now more than thirty years since the last light keepers left the service in 1998 and many more since the rock towers were abandoned, but I would ask my reader to contemplate for a moment what it would be like inside a tower with a Force 9 storm raging in the Channel for eight hours or more. Lighthouse engineers are acutely conscious of the pressures exerted on their precious towers. Smeaton designed his tower to sweep the water upwards and outwards at the gallery to protect the lantern. The keepers were obliged to keep their lamps burning constant and bright, but what would happen to the flame if the windows of the lantern were smashed by an angry sea?

Every rock tower is known to have shuddered at some point in its life and sometimes because there were defects in the tower or in the rock on which it stood. This was true of Eddystone in George's time, but we believe that during the three years he spent on the tower (approximately 1862-65) he did not experience any exceptional storms. The fact that these towers survived intact for so long is testament to the engineers' understanding of the forces of nature, but their understanding of the human mind in these conditions was minimal. The Victorians thought that discipline and temperance was all that was required, but that does not guarantee the equanimity of every keeper. Men did request a move away. A very small number committed suicide, but most would admit to moments of fear - even terror - in the face of a black and stormy night when no-one could sleep.

Through the summer months of long daylight hours there was a great deal to see from the gallery of the lighthouse guarding the entrance into Plymouth Sound. Eddystone became a marker for yacht races and naval trials, as well as a curiosity for Victorian excursionists. In the quiet times every keeper brought to the tower his own solution to the hours of relaxation, and it usually involved a handicraft of some sort. Painting and sketching, wood carving, tapestry, marquetry, ships in bottles, even small pieces of furniture, were attempted, and gave enormous satisfaction. George Knott attempted to build an exact replica of the tower he lived in, down to the very last detail at half an inch

Above: George Knott was appointed to the Eddystone in 1862 when the lighthouse was Smeaton's Tower. He left his appointment in 1865, just thirteen years before this early photograph was taken. Light keepers had been frightened by the severe shake of the Smeaton Tower under the impact of heavy seas and inspection showed its foundations had been undermined. With the lighthouse at risk of collapse, the decision was taken to replace it. Here we see a new lighthouse - the present one designed by Douglass - under construction on a different part of the reef where its foundations were more secure.

to the foot - 1:24. This model became well known and still exists to this day in the National Maritime Museum. Astonishingly, there was talk in the family of a second one which had graced the entrance foyer of Trinity House, but was lost when the building was badly damaged in the London Blitz of 1940. This is how that event is currently described by Trinity House.

Knowing that the 17th century Trinity House comprised timber-built rooms connected by wooden stairs and passages, the Elder Brethren had, from the very first days of the war, organised themselves and their staff into trained fire-fighting parties who were on duty both day and night.

By late 1940 the paintings stored beneath the adjacent Tower of London were showing signs of damp, and so another location was found for them in Northumberland. They were temporarily brought back to Trinity House on 28 December 1940 for repairs, and were due to travel north on the 30th.

On the night of 29 December, however, Trinity House fell victim to the most severe of the air attacks on London. When incendiary bombs landed on the wooden beams of the house, fire fighters were able put out the first fire caused by the bombs, but the shortage of water prevented their efforts to extinguish subsequent fires.

On the morning of 31 December 1940 the staff found the whole of the Wyatt building and the offices at the back with their walls more or less intact, but the interiors completely gutted; apart from the separate East Wing, the only surviving portion of the building was the basement wine cellar. Many archives, rarities, fine models, hangings and paintings were destroyed, save for some paintings that had been at Bayham Abbey, and other archives and books that had gone elsewhere into the countryside.

The moment I entered the foyer of Trinity House in 2014 and saw an alcove with its model of Eddystone on display, I felt sure that George's model had once stood there, but we cannot know with

certainty. Trinity House admits that 'fine models' were lost, but have never been specific. I cannot believe that what was lost was not recorded. Neither do I presumptuously dismiss family stories, as they are so often based upon the truth. This is also true about the construction of the model which I will come to in a moment. So often there are tales of a chance discovery, and my hope has always been that a pre-1940 photograph exists capturing the foyer with its alcoves in one of which stands George Knott's model of Smeaton's tower.

George had made the model, it is said, from driftwood collected at the rock, but anyone who has visited the rock, as my brother Ken has done, will look at that suggestion in disbelief. It is not impossible, but it is very unlikely simply because there were three woods used, and scavenging for driftwood is an entirely random activity, let alone a hazardous one. It is my opinion that George collected off-cuts known as 'chips' from the boatyards near his cottage in Cattedown. In those days off-cuts were sold for firewood, essential for kindling the cooking range or lighting a rare fire in the parlour. It would have cost a penny or two, but was much more definite and readily available, especially if there really were **two** models – one at home and one on the light. Everyone who learns a special skill needs to refine it. They rarely achieve their best work right away. It seems likely that a first model was less than perfect and simply a precursor to a second, more detailed version. In any case, a model was finished in July 1865 and I will return to it later in the chronology.

A Year In The Life Of The Eddystone Lighthouse - 1863

Whilst perusing contemporary, local newspapers for the period of George's tenure as Principal Keeper I was astonished at the number of collisions and sinkings that took place within nine miles (14.4 km) of the Eddystone lighthouse. It is nine miles to the nearest point of land. Nine miles might seem a long way, but it was within sight of the lighthouse and many were even closer, at a distance of one or two miles (3 km). These 'accidents' were mostly the result of bad seamanship, incompetence and inattention, which was inevitable with so many vessels on the water. Yet even with the presence of Smeaton's tower, some vessels managed to run upon the reef.

At about 9.30 in the morning of Wednesday 18th March, 8 miles west of the Eddystone, the *Eleanor,* bound from Newport to Portsmouth Dockyard with a cargo of oak, sprang a leak which rapidly filled the hold. She had encountered heavy weather on her way south, but the crew of four were given no time to rescue anything before taking to their boat. The foundering happened on the fishing grounds and was seen by Captain Lucock on the Plymouth trawler *Umpire* who set off to her assistance, but he had not been seen by the shipwrecked crew who were pulling (rowing) for Plymouth with *Umpire* in their wake. After an hour of pulling in very trying conditions they spotted *Umpire* and altered course to meet her. The trawler found one man and a boy in an exhausted condition, and all were soaking wet. At the Barbican in Plymouth they were handed over to the Mission to Seamen to recuperate.

The small Brixham-registered coasting sloop, *Daring,* left Salcombe in ballast for South Wales on Tuesday 16th June. Between 1 and 2 o'clock in the morning she ran over the northeastern rock of the reef at low tide. Her owner, Philip Lowe, was steering at the time with his crew asleep below, but seemed ignorant of his predicament. He later said that he was not aware of a rock so far from the lighthouse. The light keepers saw what was developing and frantically waved to him to keep away. He noticed their signals and shifted the helm, but it was too late. A large hole was stove in forward and the sloop began taking in water rapidly. She sank in deep water within 10 minutes. On board, the captain, seaman and two boys took to their boat. The incident was witnessed by the Plymouth trawler *Secret* which took the men on board and returned them to Plymouth by about 4 o'clock. Only a clock and a compass were saved.

During July, adverts began appearing in newspapers announcing the arrival of the excursion steamer *Paris* which would make daily voyages from Millbay Pier to all the interesting locations around the coast including the Eddystone and the Breakwater with evening voyages to the Yealm and the Royal Albert Bridge.

On the 17th September, fishermen caught a rare swordfish tangled in their drift nets not far from the Eddystone. They took it to the Barbican, but decided that its rarity should be exhibited for profit and, before experts could arrive to examine it, the fish had found its way to Tavistock. It was found there and bought by the Plymouth Museum. It was 7 ft 7 in (2.3 m) long with a sword of 2 ft 10in (86 cm) and it was later preserved for display at the Plymouth Athenaeum.

During the last week of September a new Royal

Navy ship, *Prince Consort,* was scheduled to make a trial run of her engines from the Hamoaze, around the Eddystone light, and back to her moorings to see how long it would take. This ship was one of those oddities that came about during the lost years of the Royal Navy. She was launched from Pembroke Dock in June 1862, but had been laid down as a 91-gun 2nd rate ship-of-the-line named *Triumph*. On the slip she was cut in half, shortened, and a deck was removed. Then,with engines and a propeller added, she became a 31-gun iron-clad broadside frigate of 6,800 tons and had newly arrived in Plymouth.

On Monday 5 October Joseph Spicer took the fishing boat *Endeavour* out of Sutton Pool at 8 in the evening and cast her nets about 5 miles (8 km) from Eddystone. With three men and two boys on board she had all her lights rigged correctly. An outward bound naval gunboat, *Alert,* was very far from being alert, and set on a collision course for the fishing boat, which was unable to move due to the encumbrance of her nets. The two boats collided with serious consequences for the fishing boat. The crew of *Alert* took the boys on board, but the men stayed with their boat and with the assistance of *Alert* they reached Plymouth by 5 o'clock in the morning. The fishing boat and its gear had been valued at £200; the damage to the boat and the loss of the gear amounted to £120.

A More Domestic Scene

In an age when the roles of men and women were distinctly different and clearly accepted by each individual the 'man of the house' would never be found in the kitchen, so was unlikely to have gained any culinary skills. At sea the situation was different. The Royal and Merchant Navies employed men as cooks and stewards simply because women would rarely be accepted as crew members. That maritime tradition extended to lighthouses, so it is worth a moment's consideration.

Three men in a lighthouse would have had to take turns at preparing meals. They would all have to accept their time in front of the cooking range as the watch system took the first priority. No doubt some were better cooks than others, and married men might have benefitted from some instruction from their wives. Bachelors were more likely to be dependent than self-sufficient. Today, it would be very different and as a consequence we are very likely not to have a realistic understanding of what was involved in George's time.

The food too, was very different. This was mid-Victorian England. There was no refrigeration or prepared meals. There were two processes familiar to seamen – salted and dried, but the men were responsible for their own victualling. This system had been initiated by Smeaton himself, ever mindful of the welfare of his keepers. It allowed the men to buy goods at wholesale prices. Water was different. This was a matter of life and death and came on the tender in barrels, which were then hoisted in-board with a small crane or derrick.

A change in keeper each month brought fresh supplies, but how far this was shared is unknown and probably as varied as there were personalities in the service. Fishing was always available, but it was dangerous and more than one keeper has been lost from a rock whilst attending hopefully to his baited lines. A persistent family story[37] has George Knott flying kites from the lighthouse balcony. Suspended from the kite was a baited line, a method that greatly enhanced the chances of success and alleviated the risks of fishing from the rocks below. Kite fishing became a common activity amongst keepers in later generations.

A box of fish was occasionally dropped off at the rock by sympathetic fishermen who acknowledged the unsung service that the light offered to their equally hazardous occupation.

Fruit and vegetables were as important then as they are today, but a rock lighthouse could not benefit from a cultivated vegetable patch as a land station could. Availability was dictated by the season - not flown from Spain, the Middle East or Africa when out of season at home. Storage was the key, and everyone in those days knew tricks and processes handed down over generations that today are often unknown.

Potatoes store well in the dark and cold. Carrots can be stored for a month if they do not touch each other. Turnips (we now call swede) can also be stored easily, but these are root crops. Anything green must be enjoyed within days. The situation for fruit was much the same. Apples and pears were just becoming popular as a separate food. Some will keep in the dark over winter for more than a single month, whilst others have a limited life. Plums and soft fruits can best be kept as jam - and even in pies. Here the keeper's wife would be doing all the hard work in the kitchen at home. Bread and cakes would be homemade and soon devoured once on the light. Eggs would be a short-lived delicacy even if they could safely reach the lighthouse kitchen intact.

37 The story was told to Ken Trethewey in the mid 1970s by Fred Knott of Barnstaple.

There are many stories of keepers on island lights scouring the cliffs for seabirds' eggs. Cheese was easily procured and would keep reasonably well, whilst milk would not. Tea was an acquired taste without milk, and ale was seen by some as essential, but came into disrepute during the Temperance era in which this story is set.

Of course, cleaning was second nature to a light keeper, as anyone who has visited a manned lighthouse will affirm. This was an intrinsic part of the Royal Naval tradition to which Trinity House subscribed. Bright-work was bright - even spotless. White paint was white – everywhere. Tables and woodwork were scrubbed, and there was no room for poor standards in the cleanliness of anything.

It was a sad day when this ended on rock lighthouses on the 18th May 1983, almost 50 years ago. It was the anniversary of the centenary of the formal opening of the Douglass tower by the Duke of Edinburgh, but it was 120 years after George had gone aboard as its Principal Keeper.

Developments In Alma Cottages

When the Knott Family arrived at their cottage in Cattedown, Plymouth there were six children - four of them boys. If they had arrived in the summer of 1862, as seems very likely, then the eldest was Henry Thomas (11). Little Ann Dixon was the youngest who was barely one year old and would have been in Catherine's care. They had probably endured a very lengthy train journey from Paddington on the Great Western Railway to Bristol. A change of trains put them on the Bristol & Exeter Railway which may have brought them to Plymouth, but it was more likely that another change was necessary at Exeter when they rode on a train of the South Devon Railway. How many hours that took is not known, but it is certain that they would have been exhausted.

With four brothers aged 11, 8, 6 and 3 (the last being Frederick Warner, our great-grandfather), 9 year-old Matilda was probably her mother's handmaid. It is difficult to know how important school was in the minds of their parents as it was something that was only just beginning to find a place in the lower levels of society. Plymouth's new schools were centred upon enlightened churches, and that may have been another reason for coming to Alma Cottages: there was a new school just up the road.

Shepherd's Lane was adjacent to St. John's Church and a purpose-built school for boys had recently opened there in the spring of 1861, possibly a little over 12 months before the Knott's arrival. Henry, George and Arthur were all old enough to attend, but there were criteria to meet. Boys had to be baptised, but they also had to attend Sunday School and church services on festival days; 2d per week must be paid for each boy. Initially there were 140 boys in a single room, 60 feet (18 m) long by 18 (5.5 m) feet wide, but it was 25 feet high (7.6 m) and very light and airy. This proved to be too large a number and it was reduced to 120 boys. Regular attendance was essential otherwise it was – OUT!

Coincidentally I have stood in that 'light and airy room' when it was the sale room of auctioneer Paul Keen and I was perusing the library of Plymouth historian and author Crispin Gill who had recently moved into the new apartments overlooking Vauxhall Quay on the Barbican.

There was a school of sorts for girls and infants, but it was in a dingy room in Parr Street, hired for the purpose, and filled with a complement of 90 pupils paying the same 2d per week. They had their own schoolmistress and many 'monitors' from among the older girls, but it was very far from satisfactory and didn't change until 1869, long after the Knott Family had moved to North Devon. It is unlikely that Matilda attended that school as her parents became concerned about her health.

During 1863, Matilda developed a mysterious complaint with one of her knees. This was somewhat depressing as Catherine had realised by August of that year that she was expecting another baby. Matilda's knee did not respond to any of the treatments suggested by friends, and in October she was admitted to the South Devon Hospital in Notte Street. This hospital had been built in a cherry orchard near the site of Princess Square on the south side of Notte Street. It had been opened in 1840 with 55 beds, but in 1863 the Royal Albert Wing was opened with another 50 beds. Matilda was admitted to a dedicated children's ward, but even the attentions of the resident surgeon, George Silvester, did not cure her. On Saturday 24th October 1863 she died with her mother and father at her bedside. It was fortunate indeed that George was at home. Catherine needed his support as they both recalled the heartache of twelve years previously when their eldest child, Ann, died as a 16 month-old toddler.

It was Monday when George walked to the Registrar's Office to record Matilda's death, and it was on Wednesday 28th October that she was conveyed from the hospital to the Ford Park Cemetery. She was only ten years old. The certificate

vaguely records the cause of death as 'disease of the knee,' but in the 21st century what are we to make of that? It is difficult today to accept that any problem with a knee could be ultimately fatal.

There is little doubt in my mind that Catherine would have had some support from neighbour Rebecca Ditcham, 65 years old, and with a large family of her own, many of whom were scattered around Plymouth. Thomas Valentine Ditcham, recorded in the 1861 census as a grocer, married Sarah Tozer at St. George's, East Stonehouse on the 7th July 1863 and Eliza, who was with him at the census, was 28 and engaged to be married. That marriage took place in St. Andrew's Church on the 2nd January 1864. The register revealed that she had married a goldsmith from Bristol and her proud father was the Superintendent of Trinity Lights. However, the Ditchams were no longer near-neighbours of Catherine Knott. They had moved to Windsor Place, a very fine address, but I think it unlikely that the Knotts had been forgotten.

Catherine was not so lucky when she went into labour towards the end of February 1864. When George finally made it ashore from the rock he was surprised and delighted to be greeted by the well expanded lungs of Mary Jane Knott who was now more than a month old. She had been born on Wednesday 2nd March 1864 at 2 Alma Cottages and she had statistically restored the family to the way it was before little Matilda died. However, she would not be intimidated by four brothers as family folklore suggests that she was always ill-tempered and wilful as a child. Yet she would become indispensable to her parents after they retired from the North Foreland light. She kept house for them in Dover until 1897, when she finally married a soldier from Dover Castle and disappeared from their lives.

In the days surrounding Mary Jane's birth, Catherine would have appreciated a friendly female presence and perhaps Emma Jolin who lived a short distance away in Jubilee Street became her friend. There was much to do with four boys and tiny Ann in the house, and George away on the Eddystone. It was the last day of the month before Catherine felt able to visit the Registrar's office and inform Mr. Heydon of Mary Jane's birth. It was a Thursday when Plymouth was alive with its bustling markets. Catherine was looking forward to George's return to show him his latest arrival.

On Sunday 3rd April, the boys had to be ready for Sunday School, but all was thrown into confusion when a message arrived that George's assistant keeper, Charles Jolin, had died at home in 23 Jubilee Street. The announcement in the *Western Daily Mercury* on the following Saturday (9th April) is brief. There is no hint of a sudden death or a short or long illness; he was simply dead. He was buried the next day, Sunday 10th April 1864 in Ford Park Cemetery. It had been six months of continuous emotional upheaval culminating in six weeks that only the strongest could survive, and it was a testament to the Knott Family that life did not disintegrate easily.

However, it brings me back to my frustration at being unable to discover the names of the other assistant keepers working with George. Every page of the Baptism Registers for both Charles Church and St. Andrews Church was searched between 1861 and 1865 and revealed not a single baptism of a light keeper's child with the exception of Charles and Emma Jolin. He was the only one known to us and just 30 years old when he died. He should have been in his prime as a light keeper, but Emma was now a widow and no subsequent record has been found for her.

Eddystone Revisited 1864

During the summer of 1864, George would have noticed that he had passed his second year on the light. It was a routine with which he was now very familiar, even the events on the sea outside followed a familiar pattern of occasional collisions and unusual visitors. The weather, the seabirds, the shoals of mackerel were all there to be seen, but no fortune-teller could ever predict what would happen next, nor when it would occur. One certainty was that George's model of the light tower was taking shape, much to his satisfaction.

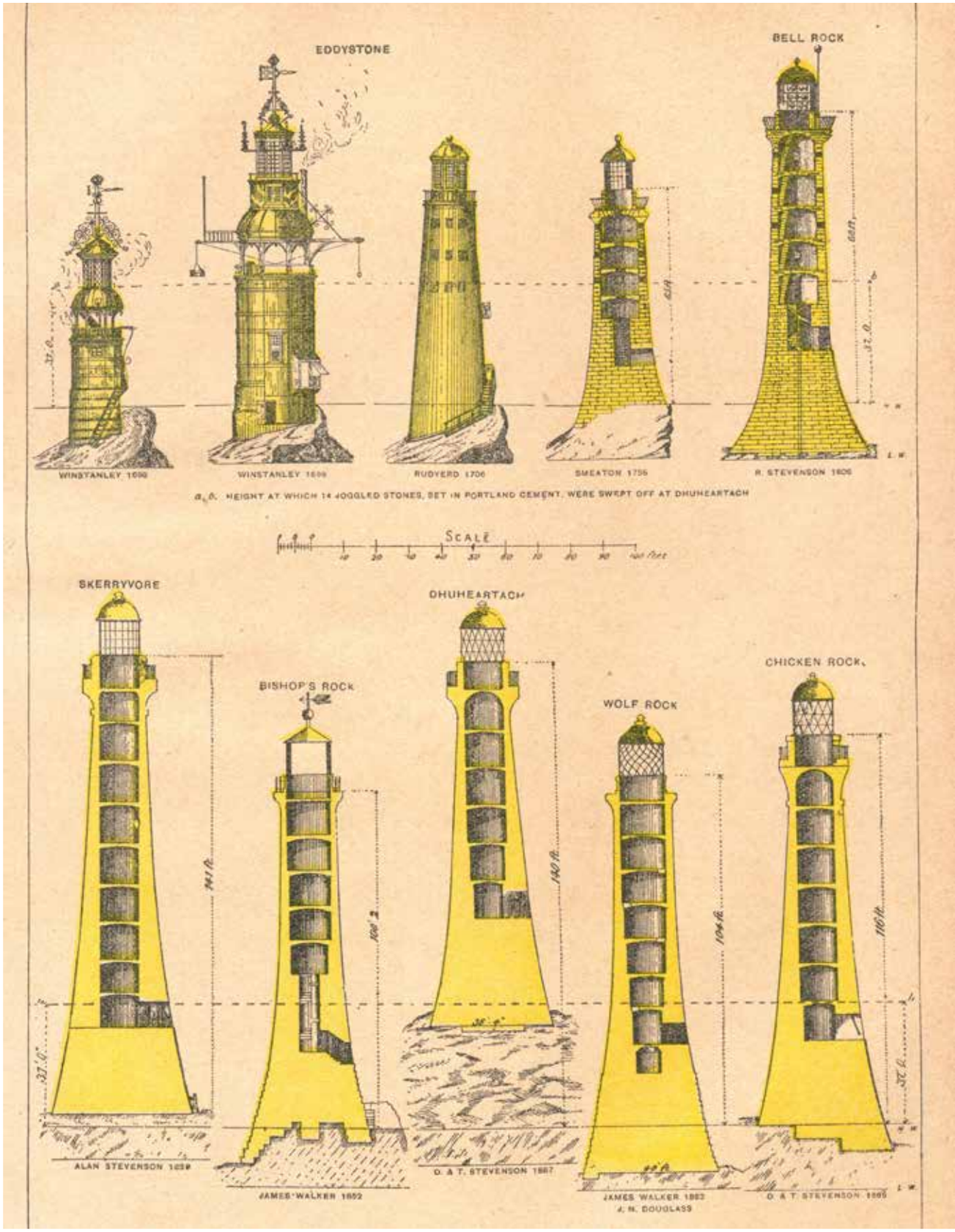
On Tuesday 31st May, J. Francis Buller Esq took the yeomanry and farmers of the parish of Morval for their annual excursion to the Eddystone light on that gentleman's beautiful yacht, *Mona*. It was a very pleasant day out. The Buller Family were significant landowners throughout Cornwall with a long and ancient lineage.

The new ironclad frigate, *Ocean,* left her moorings off Mount Wise at about noon on Thursday 27th July to make the final contractor's trial of her engines. Built by Maudslay & Field, she plotted a course around the Eddystone. On her return in the early evening everything was found to be as it should be, and she was handed over to the Government and placed in the First Division of the Steam Reserve. This was another ship similar in design to the *Prince Consort* highlighted in 1862, but *Ocean* had retained only 24 of her original 91 guns.

Above: An old engraving of the Smeaton Eddystone lighthouse.

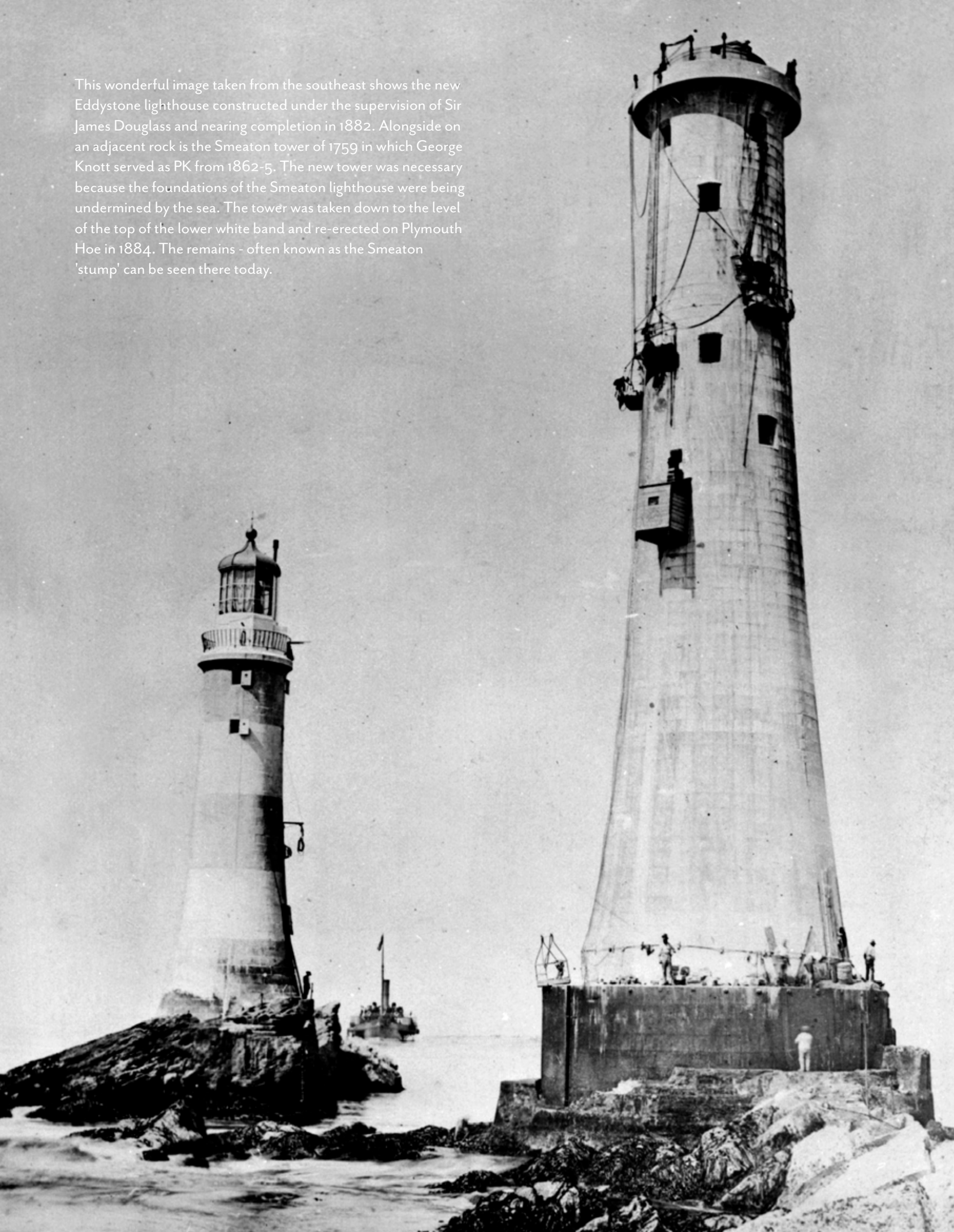
At about 5 o'clock on the afternoon of Monday 16th August a Norwegian brig named *Ceres* was passing the Eddystone light, inward bound from Cadiz to Elsinore with a cargo of salt when she was run down by a 'Federal cruiser' named *Sacramento*. This was a ship of the emerging American Navy and she struck the brig broadside at about 8 knots. The brig immediately began filling with water and the crew of nine were taken on board the American ship as the brig sank - but salt is a strange cargo. Initially, the boat began to sink by the bow as the salt soaked up sea water and shifted forward, but it then began to dissolve, and as it did so the brig re-floated only to fall again on her side. Six fishing trawlers took her in tow, but they made very little progress before a steam tug arrived when they were about 6 miles from Eddystone. The assistance that this vessel offered was refused as the fishermen were intent on claiming the salvage value for themselves, but they didn't succeed. By Saturday they were getting nowhere and the tug had been joined by two tugs from the dockyard, *Scotia* and *Confiance*. Together, they brought the wreck into Cawsand Bay on the following day (Sunday), and later in the evening moved it to Commercial Wharf where an attempt would be made to return the brig to her upright position.

Curiously, the New Year saw little of any significance reported in the newspapers beyond the loss of the Plymouth trawler, *Sarah Stibbs,* a long way south of the Eddystone during a January storm. However, there was no ignoring the fact that every storm was relentlessly wearing away the rock on which the lighthouse stood. Smeaton had known a century earlier that, over time, the pounding of the waves would achieve that end, and when it was surveyed in 1813 the deteriorating state of the rock was pointed out to the Elder Brethren at Trinity House who were not, it seems, particularly interested. Eventually some strengthening iron bands were added to the lighthouse, but the source of the problem was ignored. It is thought that no further work was undertaken until 1865 when a little extra strengthening was again added to the tower and, if this is true, then George would have seen what was done. Yet the fate of the tower was in sight. If the rock was ignored then the tower would fall. Fortunately, George's model of the light was already finished and he would soon have an opportunity to show it to the public. On the 17th July 1865 the *Western Morning News* reported the preparations for a new exhibition of handiwork from the working classes.



Above: This graphic illustrates the progression of building of rock lighthouses, commencing with Winstanley's first structure on the Eddystone in 1698, up to the time of the newer towers on Bishop Rock and Eddystone, which are not included. Even had they been, they would both have been placed as taller than Wolf Rock, but smaller than Skerryvore, which remains the tallest lighthouse in the British Isles. In England, the Bishop Rock lighthouse is tallest. The optic used in Skerryvore is shown on p172. L to R, T to B: Winstanley (1698), Winstanley (1699), Rudyerd (1706), Smeaton (1759), Bell Rock (1806), Skerryvore (1844), Bishop Rock (1852), Dhu Heartach (1867), Wolf Rock (1862), Chicken Rock (1869)

This wonderful image taken from the southeast shows the new Eddystone lighthouse constructed under the supervision of Sir James Douglass and nearing completion in 1882. Alongside on an adjacent rock is the Smeaton tower of 1759 in which George Knott served as PK from 1862-5. The new tower was necessary because the foundations of the Smeaton lighthouse were being undermined by the sea. The tower was taken down to the level of the top of the lower white band and re-erected on Plymouth Hoe in 1884. The remains - often known as the Smeaton 'stump' can be seen there today.



The Curious Tale Of A Name And An Earl's Daughter

I have always thought that Henry Needham Knox Knott was a bit of a mouthful, but names such as these are often surnames that are carefully added to the first name as a mark of respect for some close family member on the distaff side. So, when Henry Knott married for a second time in the summer of 1844 and took everyone by surprise by having a second family, it was only to be expected that any name given to a new child of the union would be influenced by the wishes of his second wife Margaret Arnold. Their son Henry was born in 1848, but when a daughter arrived in 1854 and was named Anna Marie Georgiana Knox Knott. People must have wondered what Margaret was trying to say. It was now obvious that 'Knox' was important to the Arnold Family, but what about Needham?

Anna was always known as Annie and she never married, yet in tracing her through the censuses she never strayed far from her family and after the death of her mother in 1886 she was always to be found with her brother and his family. Even after Henry and his wife Jane had both died, she continued to live with their children, but she was never a burden. She was always comfortably off 'living on her own means' as the census Enumerator repeatedly said. Yet there was one census missing – 1871.

Persistence eventually located her at 13 Waterloo Crest, Dover and the household was a large and aristocratic family with six servants from footman and cook to the must junior servant – nurse maid - and that was Anna Knott aged 17 years old.[1] The mistress of the house was Mabella J Knox and that was our first clue, but her husband was not in the house. Mabella had been born in Ireland 69 years previously and she added that she was the 'daughter of an 'Earl.' So, who was this lady and how does the name Knox fit into our family story? It gets more intriguing still.

Lady Mabella Josephine was the fifth daughter born to General Francis Needham, 1st Earl of Kilmorey (Co. Down, Ireland) and his wife Anne Fisher and Mabella had been born on the 22nd November 1801. On the 12th February 1822 she married the Hon. John Henry Knox, the son of the 1st Earl of Rafurly (Ireland) Thomas Knox and his wife the Hon. Diana Pery and he was born on the 26th July 1788. John Knox and Mabella raised a large family of about 10 children, but it is unclear exactly what John Knox did – if a 'Fund Holder' did anything. However, the censuses together with the birth registrations of so many children show that they were constantly on the move, yet always having a large retinue of servants.

In 1832 the Knox family was somewhere in France when Harriet was born, but on the 21st November Mabella's father died as Colonel of the 86th Regiment of Foot. This must have brought them back to England for on the 8th April 1836 a son, Octavius Newry Knox, was born to Mabella in Dover. It was here that the family probably recruited Margaret Arnold, possibly as a nurse maid and she stayed with them as they continued their travels into South Wales. In 1839 the Knox Family was in Tenby when another son was born named Arthur and they were still there at the end of 1840 when the next daughter arrived. She was named Anna Maria Georgianna Knox (as spelt in the GRO Index).

Six months later, on the 6/7th June 1841, the very first person census was conducted and the Knox Family was located living at Berry Hill, Taplow in Buckinghamshire. Six children were with them including six months old Anna Maria and among the staff listed, is Margaret Arnold (nominally 25 years old). The family remained in Taplow until their final child was born in 1843 – a daughter Emily. Margaret Arnold probably returned home to Kent sometime around this period, married Henry Knott and settled down at the South Foreland lighthouse, but when the Knox Family reappeared in Dover, sometime prior to 1871, possibly coinciding with Margaret's widowhood, it was an opportunity not to be missed.

Anna Maria Georgiana Knox was now 30 years old and Octavius approaching 35 with a wife and young daughter. Hester Knox was just three years old and in need of a nurse maid, so it only needed a word from Lady Marbella Knox and the daughter of her own loyal nurse maid from thirty years previously was welcomed into the household. Anna Maria Georgiana Knox Knott now took her instructions from Lucy Spring Knox (née Rice) a Baron's daughter, whilst her namesake continued in the life of leisure she had always known. She outlived her nurse maid (Margaret Arnold) by almost a generation. She died in Bath on the 8th June 1944 aged 103 years. Fact is sometimes stranger than fiction!

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