

## Extended Discussion

within this document *text in pink* highlights pending research issues

As it is said little is known about Ludgate himself, and certainly there is a paucity of relevant material in print or online, the following encapsulates further research, but *this is not intended to be more than notes of what has been done, in order to save others from re-treading that same ground.*

## Table of Contents

1.	Percy Ludgate's motivations, inspirations, publications, legacy.....	12
1.1.	Percy Ludgate's motivations.....	12
1.2.	Percy Ludgate's inspirations.....	13
1.3.	Percy Ludgate's 1909 Paper .....	15
1.4.	Percy Ludgate's 1914 Paper .....	18
1.5.	Percy Ludgate's influence and historical importance.....	18
1.6.	Why were Ludgate's ideas forgotten? .....	18
1.7.	Re-imagining Ludgate's Analytical Engine.....	21
2.	Percy Ludgate's education and career .....	22
2.1.	Percy Ludgate's schooling.....	22
2.2.	Why did Ludgate fail to get a Civil Service post?.....	22
2.3.	Percy Ludgate's illness.....	24
2.4.	Percy Ludgate's wartime role.....	25
2.5.	Rathmines College of Commerce.....	26
2.6.	Kevans & Son, accountants .....	27
3.	Where Percy Ludgate lived.....	27
3.1.	Home 1: Townshend Street, Skibbereen.....	27
3.2.	Home 2: Unknown.....	27
3.3.	Home 3: 28 Foster Terrace, Dublin City North .....	27
3.4.	Home 4: 30 Dargle Road, Drumcondra .....	27
4.	Percy Ludgate's family context and related questions .....	29
4.1.	The 'Liverpool' Percy Ludgate.....	30
4.2.	Percy Ludgate's immediate family .....	31
4.3.	Percy Ludgate's paternal extended family, grandparents and ancestors .....	39
4.4.	Percy Ludgate's maternal extended family, grandparents and ancestors .....	42
4.5.	Percy Ludgate's distant relations .....	43
5.	Probate and Wills.....	44
5.1.	Percy Ludgate's will and probate .....	44
5.2.	Violet Ludgate's will and probate.....	45
6.	Percy Ludgate's grave.....	46
6.1.	St.George's Parish.....	47
6.2.	Where was Percy Ludgate buried? .....	47
6.3.	Who owns Percy Ludgate's grave?.....	48
7.	Percy Ludgate's academic contacts .....	50
7.1.	Professor Sir Charles Vernon Boys FRS .....	50
7.2.	Professor Arthur William Conway FRS .....	52
8.	Research Notes.....	53
8.1.	UK Research Notes.....	53
8.2.	Irish Research Notes .....	54
8.3.	Public appeal for information .....	55

8.4.	Investigating Team.....	56
9.	Table of Percy Ludgate's close relations, in-laws, etc.....	57
10.	Family tree of Percy Ludgate's wider Ludgate relations.....	58
11.	SCSSTreasures Catalog .....	62
12.	References.....	63
13.	Figures.....	71
14.	Appendices.....	110
14.1.	Appendix 1: Percy Edwin Ludgate's family tree.....	110
14.2.	Appendix 2: Barbara Ludgate's family tree.....	110
14.3.	Appendix 3: Eileen Mary Ludgate's family tree .....	110
14.4.	Appendix 4: Evidence.....	110

## Table of Figures

Figure 1:	<i>Photograph of Percy E. Ludgate</i> .....	72
Figure 2:	<i>Percy Ludgate's published description of his Analytical Engine [2]</i> .....	73
Figure 3:	<i>Percy Ludgate's ancestors, courtesy Gerry Kelly, with updates</i> .....	74
Figure 4:	<i>Percy Ludgate's parents and siblings, courtesy Gerry Kelly, with updates</i> .....	75
Figure 5:	<i>1913 Telephone Directory entry for Kevans &amp; Son</i> .....	76
Figure 6:	<i>Results of the June Accountancy Examination, Freeman's Journal</i> .....	76
Figure 7:	<i>Marriage of Percy Ludgate's parents</i> .....	77
Figure 8:	<i>Summary of Military Service of Percy Ludgate's father Michael Ludgate</i> .....	77
Figure 9:	<i>Thom's 1891 Directory entry for 28 Foster Terrace</i> .....	77
Figure 10:	<i>Thom's Directory 1894, showing Michael Ludgate</i> .....	78
Figure 11:	<i>Imprisonment of Michael Ludgate</i> .....	78
Figure 12:	<i>Birth of Percy Edwin Ludgate, 2-Aug-1883</i> .....	79
Figure 13:	<i>Death of Percy Edwin Ludgate, 16-Oct-1922</i> .....	79
Figure 14:	<i>Will of Percy Edwin Ludgate, Dublin</i> .....	79
Figure 15:	<i>Will of Percy Edwin Ludgate, London assets</i> .....	79
Figure 16:	<i>Will of Violet Ludgate, Dublin</i> .....	79
Figure 17:	<i>Percy Ludgate, 1890 school record</i> .....	80
Figure 18:	<i>Percy Ludgate, 1891 school record</i> .....	80
Figure 19:	<i>1901 Census: Frederick Ludgate, 24 Dargle Rd, Drumcondra</i> .....	81
Figure 20:	<i>1901 Census: Percy Ludgate, 30 Dargle Rd, Drumcondra</i> .....	81
Figure 21:	<i>1901 Census: Michael Ludgate, 14 Quay Street, Balbriggan</i> .....	82
Figure 22:	<i>1901 Census: Thomas Ludgate, 13 Mardyke, Cork</i> .....	82
Figure 23:	<i>1911 Census: Frederick Ludgate, 17 Carlingford Tce, Drumcondra</i> .....	83
Figure 24:	<i>1911 Census: Percy Ludgate, 30 Dargle Rd, Drumcondra</i> .....	83
Figure 25:	<i>1911 Census: Thomas Ludgate, 173 Gurteenaspig, Bishopstown, Cork</i> .....	84
Figure 26:	<i>1901 Irish Census summary, courtesy Gerry Kelly</i> .....	85
Figure 27:	<i>1911 Irish Census summary, courtesy Gerry Kelly</i> .....	86
Figure 28:	<i>Marriage of Percy Ludgate's maternal grandparents</i> .....	87
Figure 29:	<i>Birth of Percy Ludgate's mother Mary Ann McMahon</i> .....	87
Figure 30:	<i>Births of possible maternal aunts and uncles of Percy Ludgate</i> .....	88
Figure 31:	<i>Death of Percy Ludgate's mother Mary Ann McMahon</i> .....	88
Figure 32:	<i>1841 UK Census: Percy Ludgate's maternal grandparents and family</i> ....	89
Figure 33:	<i>1851 UK Census: Percy Ludgate's maternal granduncle</i> .....	90
Figure 34:	<i>Cork register showing birth of Percy Ludgate's brother Alfred Ludgate</i> ..	90
Figure 35:	<i>Cork register showing birth of Percy Ludgate</i> .....	91
Figure 36:	<i>Winchester records of Ludgate births and deaths</i> .....	91

Figure 37: <i>Indian records of Ludgate births and deaths</i> .....	91
Figure 38: <i>Shiffnal records of Ludgate births and deaths</i> .....	92
Figure 39: <i>Gravesend records of Ludgate births and deaths</i> .....	92
Figure 40: <i>Birth/baptism transcript of Percy Ludgate's sister Augusta Ludgate</i> .....	92
Figure 41: <i>Birth and baptism of Percy Ludgate's sister Augusta Ludgate</i> .....	93
Figure 42: <i>1901 England and Wales Census: Augusta Ludgate aged 30 years</i> .....	93
Figure 43: <i>1911 England and Wales Census: Augusta Ludgate aged 40 years</i> .....	93
Figure 44: <i>1939 Register of Leavesden London County Council Mental Hospital, ....</i>	94
Figure 45: <i>Death of Percy Ludgate's sister Augusta Ludgate aged 83</i> .....	94
Figure 46: <i>Truncated death notices for Percy and Alice Ludgate</i> .....	94
Figure 47: <i>Full death notices for Percy and Alice Ludgate</i> .....	94
Figure 48: <i>Mount Jerome Cemetery map: Percy Ludgate's family grave</i> .....	95
Figure 49: <i>Mount Jerome Cemetery: location of Percy Ludgate's family grave</i> .....	96
Figure 50: <i>Grave of Percy Ludgate's family until Sep-2018</i> .....	97
Figure 51: <i>Grave of Percy Ludgate's family, from Sep-2019 onwards</i> .....	98
Figure 52: <i>Grave of Percy Ludgate's family, now marked (from Sep-2019)</i> .....	99
Figure 53: <i>Gravestone of Percy Ludgate's niece Violet Ludgate</i> .....	100
Figure 54: <i>Yearly trends, pulmonary tuberculosis (PTB), influenza &amp; pneumonia</i> ..	100
Figure 55: <i>Irish Times October 1922 analysis of deaths statistics (enhanced)</i> .....	101
Figure 56: <i>Satellite map showing Skarragh</i> .....	102
Figure 57: <i>The Grubb "Optical and Mechanical Works", Rathmines, 1875</i> .....	103
Figure 58: <i>Leinster Sports Club, on the site of the former Grubb works</i> .....	103
Figure 59: <i>Map of walk from Kevans &amp; Sons to Rathmines College of Commerce</i> ..	104
Figure 60: <i>Map of end of walk to Rathmines College of Commerce</i> .....	105
Figure 61: <i>Satellite map of end of walk to Rathmines College of Commerce</i> .....	106
Figure 62: <i>Satellite map of end of walk to Rathmines College of Commerce</i> .....	107
Figure 63: <i>Percy Ludgate's home, 30 Dargle Road, Drumcondra</i> .....	108
Figure 64: <i>Map showing Percy Ludgate's home, 30 Dargle Road, Drumcondra</i> .....	109

## 1. Percy Ludgate's motivations, inspirations, publications, legacy

### 1.1. Percy Ludgate's motivations

In the late 18th century there were lots of developments in calculating machines, i.e. machines that could be used to do multiplication and division, though not necessarily in a single operation, and also in adding machines. As a gross simplification there were two very different strands of development, for two very different markets, one essentially scientific, the other commercial, that stayed largely separate until the work of Comrie in the 1930s. However, it was in the late 19<sup>th</sup> Century that commercial developments accelerated. Felt manufactured the Comptometer from 1887 and Comptograph from 1889 [41]. Burroughs manufactured his adding machine from 1892, opening a factory in Nottingham in 1895 [40]. The Millionaire calculator, which does direct multiplication, was manufactured from 1893 [38].

From Irish Newspapers on *Findmypast* (via OCR), courtesy Paul Hockie:

MACHINE-MADE CLERK. are, will suppose, 100 cheques brought into bank, and they have entered and the amount added up. They are taken to the adding machine, the various amounts registered roll of paper the manipulator of keys in the typewriter, and When the whole hundred cheques

*May 9, 1903 - Longford Journal - Longford, Longford, Republic of Ireland*

FIFTY NEW MACHINES ADDED. Fifty New Machines have recently been added the Commercial Department the Academy. Students receive a most thorough and most up-to date Training. BUSINESS FIRMS RELY ON THE CERTIFICATES PROFICIENCY five u by Mr. Hughes. Intending

*January 25, 1904 - Belfast Telegraph - Belfast, Antrim, Northern Ireland*

MACHINES THAT COUNT. design combining the work the typewriting machine and adding machine in one operation, the nine numeral keys of the typewriter keyboard setting the eighty-one numeral keys the adding machine. This machine is available at all times for correspondence or other

*September 19, 1904 - Derry Journal - Londonderry, Londonderry, Northern Ireland*

1909: Modern Business, an English office journal, says of the Burroughs adding machine it has just purchased: "It brings mechanical skill almost to the point of human intelligence.... it is amazing, but it is true."

1911: The first model of a Burroughs calculator is introduced. Bearing a striking similarity to the Felt & Tarrent machine.

*1909 and 1911 - from [40]*

There are many more, both earlier and later. There is no indication that inspiration for Ludgate's novel mechanisms came from any pre-existing machines, but it is necessary to explore that possibility.

Percy Ludgate is commonly referred to as an accountant, but he did not qualify until 1917, and was a clerk in a Corn Merchants in the 1911 Census, years after his 1909 paper and many years after he began that effort in 1903. So accountancy did not play any part in his motivations.

In his later years, with his involvement in accountancy, one might expect Ludgate to be interested in adding machines. Ludgate was an accountant at a time when much of the work involved listing and totalling, and would by then understand the design requirements for an accounting machine and how it would make his life easier. He worked for Kevans & Son, which was only taken over in 1968 (now part of PWC) and as adding machines were expensive they often were retained and maintained for a very long time. It would not be surprising if his employers had such machines but he did not work for them until years after his 1909 paper.

It is not obvious why he became interested in automating complicated mathematical calculations, whatever his exposure to standard calculating machines. One possibility is while he was a Boy Copyist in the National Education Office he was exposed to slightly more advanced calculating machinery intended for use in education. Another possibility is that while a clerk in a Corn Merchants he was exposed to customised or specialised calculating machinery. As pure speculation, it may be that he became interested in machines with added functionality by exposure to very useful features like the tally roll of the Comptograph [41].

Equally speculatively, perhaps it derived from his father's work and the world of ballistics, rather than his own work. Percy's father was posted to the School of Musketry (which had the responsibility for the selection of automatic weapons) and would have had in-depth knowledge of the mechanics of small arms and also machine guns that fired a round, ejected the spent cartridge, loaded the next cartridge and fired it, repeating the process many times. It is possible that he became familiar with ballistics and that some of this interested his son.

## 1.2. Percy Ludgate's inspirations

One very novel aspect of his design is the choice of multiplication as the basic operation. Ludgate could have been exposed to a Millionaire calculator [38], which does multiplication with one handle rotation, a descendent of Bollée's 1889 invention.

*Trivia: At the Napier Tercentenary Celebration Prof.d'Ocagne explained that the principle of the Millionaire calculating machine was invented in 1893 (sic) by a young French mechanic, Léon Bollée, who constructed a machine to help his father, a bell founder, in the necessary calculations*

Note that 1893 is actually when manufacturing of the Millionaire began, not when Bollée invented his machine. In fact Bollée was third to invent a direct-multiplication machines; he unveiled his machine at the 1889 Paris Exposition, where it won a gold medal, and in 1889 and later received US, British and French patents, amongst others. The second was Ramón Silvestre Vereá García (1833-1899), a newspaper publisher in New York, who in 1878 won a gold medal at the Exposición Mundial de Inventos de Cuba, and received a U.S. patent for his machine. But first was Edmund D. Barbour

of Boston, USA, who in 1872 received US, British and French patents for direct-multiplication machines.

The Millionaire was designed and patented by Otto Steiger, a Swiss engineer, in 1892, and manufactured from 1893, but sold by Hans W.Egli of Zürich from 1899.

From email discussions with John Wolff, a technical expert on the Egli's MADAS machines [42], about any possible influence of the Millionaire on Ludgate's design:

That would be rather hard to answer until you find either his plans or his machine. But why focus on the Millionaire? It is just one of three descendants (Millionaire, Kuhrt, Hopkins) of Bollee's "multiplication table" mechanism, and there were other multiplying technologies (e.g. the Mercedes Euklid) commercially available in the early 1900s. If Ludgate's machine does not use a lookup table or proportional racks, there seems little reason to try to connect it to any of these machines in preference to any other.

Of course, all machines use common components like registers and carry mechanisms, but these were established technology since the time of Pascal and Leibnitz. If you're looking for a basic calculator mechanism onto which to graft a Ludgate multiplier, you should perhaps start with the "grandfather" of all modern-era machines, the Thomas Arithmometer. (Even George Chase, the chief engineer at Monroe, used the Thomas machine as a platform to illustrate new principles in some of his patents from the 1930s).

On the converse question of influence of Ludgate's design on subsequent machines, and especially as Ludgate died after visiting Lucerne in 1922, on any visit to Egli while there and hence any influence on Egli's 1931 Portable MADAS calculator:

Apart from its multiplier, the "Portable" MADAS from 1931 is just a re-packaging of the "long" MADAS of 1913, which in turn is just another copy of the Thomas Arithmometer with a cam-programmer mechanism to perform the division algorithm. The multiplier mechanism in the Portable MADAS uses the same cycle-counting mechanism as has been used in Swiss striking clocks since the 1700s, except that it uses stepped drums instead of snail cams as the storage mechanism, and another cam-programmer mechanism to select the appropriate drum. In short, the MADAS is a logical development from existing well-established technologies. The only known external influence is a collaboration with Carl Friden from the USA on the design of the tens-carry mechanism for the counter register, and an apparent cartel arrangement with Friden not to compete in each other's territories.

So the long-MADAS uses the Thomas Arithmometer mechanism (its basic operation is addition using Leibniz wheels, with multiplication in an accumulator) while the later Portable MADAS uses a cycle-counting mechanism. Neither uses the same multiplier as the Millionaire or that of Ludgate's engine.

In regard to personal interactions, nobody knows where the Steiger and Egli records ended up. John Wolff's associate Gerard Saudan [43] has made an extensive search for Egli company records, without success, and also has been in contact with one of Egli's grandsons, but obtained no useful information on personal records either. There

are various lists of purchasers in Egli's advertising materials from the time. Egli publicity material from 1904 shows that only nine Millionaires had been sold in England until that time. The sales agent is named as E.Hornberger, but Ireland is not listed separately, and so Irish companies probably had to purchase Millionaires from Hornberger. The register of still-extant machines [42] contains details of the original owners, where known. Usually only the local sales agents serviced Millionaires. And while it is possible that Steiger or Egli could have attended the 1914 Napier 300th Exhibition in Edinburgh and met Ludgate, in *ancestry.co.uk* shipping passenger records there are only 34 Egli records (no Hans), and 101 Steiger records (no Otto).

Unless contrary evidence emerges, it seems that any influence of the earlier Millionaire on Ludgate cannot be known without his plans being found, and that Ludgate's influence on the later MADAS can be discounted.

Patent drawings show the principles but do not illustrate the Millionaires as actually built, and John Wolff is not aware of any detailed plans or CAD models of them anywhere, and only has a partial set of factory training drawings for the MADAS Portable. It remains interesting that the MADAS design is automatic, with much of what an analytical engine needs, so it might be a good basis for 're-imagining' Ludgate's engine. Alternatively, perhaps CAD models of the Thomas Arithmometer, or a derivative, can be found and utilised.

### 1.3. Percy Ludgate's 1909 Paper

Ludgate published his first paper in 1909 in the Scientific Proceedings of the Royal Dublin Society. What is stated in the published paper is that it was “(Communicated by Professor A. W. Conway, M.A.) [Read February 23, Ordered for Publication March 9, Published April 28, 1909]”.

The Library of the Royal Dublin Society retains a complete series of this journal. The Chief Librarian and Chief Archivist have been very helpful in investigating the submission process that Ludgate's paper underwent. For Ludgate's adult life the Minutes of the Society's Publications Committee are preserved in two ledgers, one for 19??-1914 and another for 1914-19??. The second of these has been checked for 1914 to Mar-1919 as well as Apr-1922 to Dec-1924 without finding any reference to Ludgate (the intervening period needs to be checked). But in the first of these ledgers there are four references to Ludgate's paper:

- (1) On some date prior to 8-Dec-1908 Ludgate submitted his paper.
- (2) On Tuesday 8-Dec-1908 the RDS Science Committee decided:
 

*“M<sup>r</sup> Percy Ludgate's paper on an Analytical Machine was referred to Prof Conway for a report.”*

The RDS Scientific Committee is recorded on 8-Dec-1908 as consisting of:

<i>Sir Howard Grubb FRS</i>	
<i>afterwards Prof A Francis Dixon DSc (in the chair)</i>	
<i>W<sup>m</sup> Browne</i>	<i>Prof W.F. Barrett</i>
<i>Prof Sydney Young</i>	<i>Prof Tho<sup>s</sup> Johnson</i>
<i>Prof J.W. Purser</i>	<i>Prof H.H. Dixon</i>
<i>Prof A.W. Conway</i>	<i>Prof E.J. M<sup>c</sup>Sweeney</i>
<i>W.E. Adeney</i>	<i>R.Lloyd Praeger</i>
<i>J.H.Pollock DSc</i>	

(3) On Tuesday 12-Jan-1909 the RDS Science Committee:

*“Read Prof Conway’s report on Mr Ludgate’s paper, it was decided to adopt his suggestion & send it to Prof Boys for his report”.*

The RDS Scientific Committee is recorded on 12-Jan-1909 as consisting of:

<i>Prof A Francis Dixon DSc (in the chair)</i>	
<i>Prof.J.Joly DSc FRS Hon Secy</i>	
<i>R.Lloyd Praeger BA</i>	<i>Prof H.H. Dixon FRS</i>
<i>W<sup>m</sup> Kaye Parry C.E.</i>	<i>Prof J.W. Purser M.D.</i>
<i>Prof Sydney Young FRS</i>	<i>Prof T. Johnson DSc</i>
<i>Prof A. W. Conway MA</i>	<i>Prof J.A. McClelland MA</i>
<i>W<sup>m</sup> Brown BSc</i>	<i>Prof E.F. Whittaker FRS</i>
<i>J.H. Pollock DSc</i>	<i>W.E. Adeney DSc</i>
<i>R.F. Scharff PhD</i>	<i>Prof W.O. Hartley FRS</i>

(4) On Tuesday 9-Feb-1909 at the RDS Science Committee:

*“Mr C.V. Boys letter on Mr Ludgate’s paper was read & the paper was accepted for the next meeting. The Registrar to communicate Prof Boys remarks to the author & ask him to emphasize the points which he considers important”*

And the committee decided:

*“The following communications were accepted for the next Scientific Meeting:-*

- 1. William Brown, B.Sc. – ‘Mechanical Stress and Magnetization of Iron.’*
- 2. Richard J. Moss, F.I.C, F.C.S – ‘On the quantity of the poisonous Alkaloid Toxins in the leaves and fruit of the Florence Court Yew (Taxus baccata var. fastigiata).’*
- 3. Percy E. Ludgate. – ‘On a proposed Analytical Machine.’ (Communicated by Prof. A. W. Conway, M.A.)*

The RDS Scientific Committee is recorded on 9-Feb-1909 as consisting of:

<i>Prof A Francis Dixon DSc (in the chair)</i>	
<i>W<sup>m</sup> Browne</i>	<i>R.F. Scharff</i>
<i>Prof Sydney Young</i>	<i>R.Lloyd Praeger</i>
<i>Prof J.W. Purser</i>	<i>Prof J.A. McClelland</i>
<i>J.H. Pollock</i>	

(5) On 23-Feb-1909 Ludgate presented his paper to the next Scientific Meeting (from the published paper, which says: *“Read February 23”*).

(6) On Tuesday 8-Mar-1909 the RDS Science Committee:

*“Read M<sup>r</sup> Percy Ludgate’s letter in reply to the suggestion made to him in reference to his paper on a proposed analytical machine.”*

And the committee decided:

*“The three papers read at the last meeting by Mr. Brown, Mr. Moss, & Mr. Ludgate were ordered to be printed.”*

The RDS Scientific Committee is recorded on 8-Mar-1909 as consisting of:

<i>Prof J.Walter Purser</i>	
<i>afterwards Prof A.F. Dixon in the chair</i>	
<i>Prof James Wilson</i>	<i>Prof T. Johnson</i>
<i>W<sup>m</sup> Browne</i>	<i>“ J.A. McClelland</i>
<i>Prof A.W. Conway</i>	<i>“ H.H. Dixon</i>
<i>R.F. Scharff</i>	<i>James H. Pollock</i>
<i>W Kaye Parry</i>	<i>Prof W.F. Barrett</i>

- (7) It seems the RDS Science Committee met again on 9-Mar-1909, and decided:  
*“M<sup>r</sup> Brown’s paper (No.1152), M<sup>r</sup> Moss’s paper (No.1153), and M<sup>r</sup> Ludgate’s paper (No.1154) were ordered to be printed in the Scient.Proceed.”*
- (8) On 28-Apr-1909 the paper was published in the Scientific Proc.RDS.

Therefore it seems that the sequence of events was:

- (1) On some date prior to 8-Dec-1908 Ludgate submitted his paper.
- (2) On 8-Dec-1908 the paper was referred to Conway for review.
- (3) On 12-Jan-1909 Conway's review suggested to send it to C.V.Boys for review.
- (4) On 9-Feb-1909 Boys review said accept but recommended writing to Ludgate to ask him to emphasize some points (one could imagine on Babbage's work), and the paper was accepted for the next Scientific Meeting.
- (5) On 23-Feb-1909 Ludgate presented his paper to the next Scientific Meeting.
- (6) On some date prior to 8-Mar-1909 Ludgate replied to C.V.Boys’ suggestions.
- (7) On 8-Mar-1909 and 9-Mar-1909 the paper was ordered to be printed.
- (8) On 28-Apr-1909 the paper was published in the Scientific Proc.RDS.

So Conway reviewed first, then Boys. Perhaps Conway was Ludgate's sponsor (the paper was *“Communicated by Professor A. W. Conway”*), but this is not yet known.

The membership of the RDS Science Committee is interesting, including several Fellows of the Royal Society and numerous professors:

Sir Howard Grubb FRS	telescope and optics manufacturer
Prof.John Joly FRS	
Prof.Andrew Francis Dixon	
Robert Lloyd Praeger	botanist, Pres.Royal Irish Academy 1931–34
Prof H.H. Dixon FRS	
Wm Kaye Parry C.E.	
Prof J.Walter Purser M.D.	
Prof Sydney Young FRS	
Prof Thomas Johnson DSc	
Prof A.W. Conway MA	
Prof J.A. McClelland MA	
Wm Brown BSc	
Prof E.F. Whittaker FRS	
James H. Pollock DSc	
W.E. Adeney DSc	
R.F. Scharff PhD	
Prof W.O. Hartley FRS	
Prof E.J. McSweeney	
Prof W.F. Barrett	
Prof E.J. McSweeney [???	
Prof James Wilson	

If Ludgate’s paper was actually read and understood by them, or if they were there at his presentation, then he and his proposed machine would have been known in an exalted circle, even though he was just a clerk to a Corn Merchants at this time.

### 1.4. Percy Ludgate's 1914 Paper

Ludgate published his second paper in 1914 in the *Napier Tercentenary Celebration Handbook* [4]. **The origins of this needs to be further investigated.**

### 1.5. Percy Ludgate's influence and historical importance

To be done. **This needs to be further investigated.**

### 1.6. Why were Ludgate's ideas forgotten?

Another curiosity is after the 1909 and 1914 papers there was very little mention of his work. After Ludgate's and Boys' 1909 articles, one might expect that the Encyclopedia Britannica would have mentioned those ideas, but the 1911 edition does not, see [39]. Maybe World War I upset the dissemination of his ideas, certainly by 1926 [33] they had become relatively unknown. Prof. Brian Randell is sure he originally found Ludgate's critical 1909 article via the 1914 *Napier Tercentenary Celebration Handbook* [4], and that he found this via Baxendall's very well-known 1926 Science Museum catalogue *Calculating Machines and Instruments* [33], where it is mentioned in its Introduction. All Baxendall says about Ludgate is: "Other difference engines were designed and made by Martin Wiberg (1864) in Sweden, G B Grant in the United States: others were designed by Léon Bollée in France, and Percy E. Ludgate in Ireland, which however were never constructed." So with just this brief and very misleading reference (i.e. amongst difference rather than analytical engines) in the premier English-language pre-war catalogue of calculating machines, Ludgate remained pretty obscure, and so it would be of little surprise if Encyclopedia Britannica didn't mention him.

On the other hand Ludgate's work was sufficiently recognised to merit inclusion in the Napier tercentenary handbook Section D on "Calculating Machines", following the detailed main presentation by Francis John Welsh Whipple (of the Meteorological Office) of Glashutter's *Archimedes*, Teetzmann's *Colt's Calculator*, BCL's *Brical*, Brunsviga's Odhner pinwheel machines, Felt's *Comptometer*, Layton's *Improved Arithmometer*, Hamann's *Mercedes-Euklid*, Steiger's *Millionaire*, and Thomas de Colmar's *Arithmometer*. The fact that a trainee accountant from Dublin should be chosen to describe Babbage's engines (the obvious choice, Babbage's son Henry Prevost Babbage, was aged 90 in 1914), rather than a notable mathematics professor, shows great respect for his abilities, so **this topic does need to be further investigated.**

*Trivia: At the Napier celebrations Prof. Cajori, Colorado Springs, insisted that historians must go back to first sources: "an error once started died hard" [Cajori wrote a history of Gunter's scale, see elsewhere in this catalog]*

The Napier Tercentenary Celebration [46] took place from Friday 24-Jul-1914 to Monday 27-Jul-1914, and was followed by the Edinburgh Mathematical Colloquium [47] from Tuesday 28-Jul-1914 to Friday 31-Jul-1914. As the Napier exhibition continued to attract attention, it was kept open on Tuesday 28-Jul-1914, and visitors were admitted at a special admission charge.

On that Tuesday World War I is said to have begun, lasting from 28-Jul-1914 to 11-Nov-1918 [48]. The tercentenary celebration took place in an exceptionally eventful period: on 25-Jul-1914 Russia began mobilisation and on 28-Jul-1914 the Austro-Hungarians declared war on Serbia; Germany declared war on Russia on 1-Aug-1914; France began mobilisation on 1-Aug-1914 and on 3-Aug-1914 Germany declared war on France; then the UK entered World War I on 4-Aug-1914. The UK Defence of the Realm Act (DORA) was passed four days later on 8-Aug-1914, giving the UK Government emergency powers during the war.

As the last prominent mention of his work was in his 1914 paper for the Napier Tercentenary Celebration that ended the day before the outbreak of World War I, is it possible his ideas disappeared into the War Office or a related entity?

A significant aspect is that in Dublin, Percy Ludgate lived in north Dublin, worked in central Dublin, and studied accountancy at the Rathmines College of Commerce in south Dublin, passing from Kevans and Sons at 31 Dame St, across the La Touche Bridge over the Grand Canal to Rathmines College of Commerce (now Dublin Institute of Technology) at 143-149 Rathmines Road Lower, a 2,121 square metre complex of four storeys of offices and lecture halls. Close by (400 metres and 5 minutes walk down Military Road) was and is a major military barracks. With Ludgate's war contributions it is conceivable that he interacted with the military authorities and the scientific authorities, including Prof.C.V.Boys FRS (who sat on the Addison's War Office *Scientific Advisory Committee*), Prof.Arthur Conway FRS (who conveyed Ludgate's 1909 paper to the Royal Dublin Society), and Sir Howard Grubb FRS (see below, who studied at Trinity College Dublin but withdrew before graduation and yet became Vice-President of the Royal Dublin Society from 1893 to 1922). Very speculatively, some aspect of Ludgate's design may have been conveyed to the military, and as his ideas quickly became forgotten, maybe they were classified early in the war, so the War Office 1910-1925 'Classified Archives' (200+ boxes) need to be examined.

And almost directly opposite the college, 170 metres and 2 minutes walk away, was Sir Howard Grubb's very well known Grubb Telescope Company [48] factory ("The Optical and Mechanical Works", now Leinster Sports Club, accessed via a cul-de-sac called Observatory Lane). Grubb had very substantive War Office links; during World War I the factory manufactured telescopic gun-sights and perfected a periscope design for Royal Navy submarines, and were considered a critical resource. It is said that after the 1916 uprising in Dublin and as the Navy feared German submarines would sink shipments from Grubb, the Navy insisted the factory be moved to mainland UK (to St.Albans, near Vickers, it took so long the War was over before it was complete). The Grubb Telescope Company went into liquidation in 1925 and was bought by the inventor of the first successful steam turbines, Sir Charles Algernon Parsons, youngest son of the Earl of Rosse and graduate of Trinity College Dublin. The families knew each other; Sir Howard Grubb's father Thomas Grubb had helped design the levered mirror supports for Rosse's Leviathan telescope (see Babbage elsewhere in this catalog), and after a Miss M.Grubb, the Countess of Rosse was the 2<sup>nd</sup> female member of the Dublin Photographic Society, founded in 1854 by Thomas Grubb and others. The company was renamed Sir Howard Grubb, Parsons and Co and moved to Walker Gate, Newcastle-upon-Tyne, until it closed in 1985. Quite apart from his war contributions, it is very conceivable that with his interest in a precision

mechanical design that Ludgate would have visited the Grubb factory, famous for their precision mechanical and optical designs, and have interacted with Sir Howard Grubb. Again very speculatively, some aspect of Ludgate's design may have been conveyed to the company, so its records, need to be examined. However the catalogue entry for their records is not very hopeful, as it starts with:

The records of Grubb Parsons Ltd, Newcastle upon Tyne, England, consist of 65 linear metres (213 linear feet) of files, plans, photographs and glass plate negatives relating to this internationally renowned firm's manufacture of precision telescopic instruments. The records date mainly from the twentieth century, and in particular to the period after 1925 when the firm was based in Newcastle upon Tyne.

[http://www.tyneandweararchives.org.uk/Dserve2/dserve.exe?dsqIni=Dserve.ini&dsqApp=Archive&dsqCmd=Show.tcl&dsqDb=Catalog&dsqPos=0&dsqSearch=\(\(text\)='Grubb'\)AND\(\(text\)='Parsons](http://www.tyneandweararchives.org.uk/Dserve2/dserve.exe?dsqIni=Dserve.ini&dsqApp=Archive&dsqCmd=Show.tcl&dsqDb=Catalog&dsqPos=0&dsqSearch=((text)='Grubb')AND((text)='Parsons) (courtesy Prof.Brian Randell)

Although Grubb Parsons material held in the Tyne and Wear Archives has not yet been catalogued down to item level, its archivists are not aware of any material referring to the company's existence in Dublin (this needs to be checked again in 2018 as there may be some further cataloguing work conducted on this collection). This begs the question of where are the Grubb Dublin Archives? As astronomers are very protective of their archives it is hard to imagine Grubb's Dublin archives being scrapped. Prof.Luke Drury of DIAS is confident they are not at Dunsink Observatory. Possibly they could be amongst the Royal Irish Academy's Grubb papers (especially Sir Howard Grubb's papers), or as Charles Parsons rescued Grubb in 1926 perhaps they are in the Birr Castle Library, although in both cases initial searches have proven negative. There are 28 letters to the 3rd and 4th Earls from Thomas Grubb and 10 letters to the 4th Earl from Howard Grubb, one undated copy of a letter from the 4th Earl to H. Grubb, and also copies of letters from W. De La Rue to E. Sabine and from T. Grubb to E. Sabine, and correspondence related to Grubb's refractor for the Vienna Observatory, all from the 19<sup>th</sup> Century. It appears there is no relevant material from the early 20<sup>th</sup> Century, however **these archives need to be explored further.**

Perhaps Ludgate's ideas would be of most interest (in those days) to those who had to create tables of military use (navigation, ballistics, etc). Apparently meteorology was used in firing calculations at the time [50]. And coincidentally Ludgate's 1914 paper was in the Napier tercentenary handbook Section D on "Calculating Machines", following the detailed main presentation by Whipple of the Meteorological Office, who clearly would appreciate Ludgate's plans. Mathematics has long been important to army ballistics, for example the notable mathematician John Edensor Littlewood [51] served in the Royal Artillery from 1914-18 as a 2nd Lieutenant in the Royal Garrison Artillery, doing calculations for ballistics by hand, apparently making important contributions to the subject, and there is a record of him writing "A [memo] I wrote (about 1917) for the Ballistic Office". Littlewood's only reference in the National Archives is his service medals although his papers are deposited in several universities. C.V.Boys had an interest in the behaviour of bullets [88] and in naval fire control [89], and for example was on the War Office Ordinance Committee in 1932. Ludgate's work would have been known to anyone for whom calculation was a central issue, and once the war started it is **very conceivable that he would have been approached, so at minimum the Ballistic Office's records need to be examined.**

Also of interest is that meteorology and computing have been inextricably linked since Lewis Fry Richardson published his remarkable book, *Weather Prediction by Numerical Process*, describing his attempt to forecast changes in the weather by numerical means. Richardson's first works in 1908 proposed a graphical method to solve the Laplacian equations for free flow of water in saturated soil in relation to draining peat, and his second paper was published in the Scientific Proceedings of the Royal Dublin Society in 1908 on that subject, the year before Ludgate published his first paper in the same journal. Richardson's paper was referred to Prof.A.W.Conway for report in the minutes of the RDS Publications Committee on Tuesday 10-Dec-1907, then Ludgate's paper was referred to Prof.Conway for review on Tuesday 8-Dec-1908. In 1913 Richardson joined the Meteorological Office, and is likely to have known Francis Whipple, whose paper in the 1914 Napier tercentenary handbook preceded Ludgate's paper.

See Figures 57-62 for related photos and maps.

### 1.7.Re-imagining Ludgate's Analytical Engine

Prof.Luke Drury of DIAS asked 'Was Percy Ludgate's design ever constructed?'

The London Science Gallery did reproduce Babbage's Difference Engine (not his Analytical Engine) under the guidance of Doran Swade, who has said the analytical engine (for which extensive drawings survive) would be 'a monster' (from an interview by Hannah Fry for the 2015 BBC4 documentary: *Calculating Ada: The Countess of Computing*). Swade said it would have a processing portion 15ft high x 6ft diameter plus a 100-variable 'entry-level' store 15ft high x 45ft long, although Babbage spoke of 1000-variable machines, which would be 15ft high x 450ft long. Others have said Babbage's engine would be 30ft wide, so 'entry-level' would be 15ft H x 45ft L x 30ft W, i.e. have a footprint of 1350 sqft and size of 20250 cuft, whereas the 1000-variable engines would be 15ft H x 450ft L x 30ft W, i.e. have a footprint of 13500 sqft and size of 202500 cuft. By comparison, Westminster Cathedral, the largest Catholic church in England and Wales, has a nave 59ft wide and 230 ft long, i.e. a footprint of 13570sqft, almost the same as Babbage's 1000-variable engine.

And yet it would have precision mechanics. Babbage built only a small part of his Analytical Engine c.1871, and his son Henry built its arithmetic unit (Mill) in c.1910. There is now a funded research project at Royal Holloway, led by Doran Swade, that is investigating the Babbage Drawings with a view to trying to build at least a virtual Analytical Engine [57].

Ludgate's engine was to be much smaller. It achieved this via a novel multiplier, but even moreso via another major advance with the store, which used two ingenious small rotating repositories for rods that stored 192 variables in total. If we extrapolate Babbage's engine to 192 variables, it would be 15ft H x 86ft L x 30ft W, i.e. have a footprint of 2580 sqft and size of 38700 cuft. By comparison Ludgate's engine was to be 2ft H x 2ft L x 2ft W, i.e. have a footprint of 4 sqft and size of 8 cuft. So Ludgate greatly 'miniaturised' the analytical engine, by a factor of over 500 in footprint and nearly 5000 in volume, principally by reducing the size of the store.

The greatly reduced size of Ludgate's analytical engine could make physical or virtual reproduction a realistic proposition, but none of its plans have ever been found. There is so little detail in his papers that reproduction would mostly be 're-imagining'. What intrigues is that Ludgate stated:

1909 paper: "I've prepared many drawings"

1914 paper: "Complete descriptive drawings of the machine exist, as well as a description in manuscript, but I have not been able to take any steps to have the machine constructed"

For a machine of this complexity the complete drawings would most probably need more than 30 A2 sheets, quite probably more than 100, enough to prompt thoughts of what to do with them. Given his contact with Boys and Conway, and also his church, whether by instruction or otherwise the drawings or other material may have been passed on and so this needs to be explored.

In the 1970s, despite considerable effort, and help from a number of archivists at the Royal Dublin Society, The Public Record Office of Ireland, and the National Library of Ireland, no trace of any drawings or manuscripts describing Ludgate's machine could be found. In recent times Irish archivists, such as the Royal Irish Academy Archivist (Siobhan Fitzpatrick) and the Trinity College Dublin Archivist (Ellen O'Flaherty), have not found anything on Ludgate or of relevance to him on Conway or Boys. However, both conducted catalog not physical searches, and from experience items can be hiding in plain view, so this needs to be further explored.

An informal effort is underway as part of this research to re-imagine Ludgate's analytical machine. TO BE EXPANDED.

## 2. Percy Ludgate's education and career

Exact dates for many of the major events of Percy Ludgate's family (father, mother, brothers and sister) have yet to be found. Only the barest details of his school records are known, and almost nothing of his career records, and these need to be explored.

### 2.1. Percy Ludgate's schooling

Very little of Percy Ludgate's school records are known, and need to be explored.

### 2.2. Why did Ludgate fail to get a Civil Service post?

It is clear that he was very intelligent. He came first in civil service exams and eventually also in accountancy exams. Why did the civil service deny their top Irish candidate an appointment?

Gerry Kelly said:

Percy applied and subsequently sat the examination on 10th February 1903. The top fifty candidates were announced on 13th March and published in the LG on 17th March 1903. He was the top Irish candidate being placed nineteenth in the Order of Merit [21, 22]. This did not result in him being offered a position despite him passing a formal medical examination. A spot check in the LG of other Irish candidates on the Order of Merit confirms they were offered positions on 30th March. The Regulations

for Assistant Clerks (Abstractors) are attached for reference [23]. Boy Clerks were not retained on the Register beyond the age of twenty and Percy would have had to step down from this position on 1st August 1903 (if indeed he stayed until this date or was released earlier).

Gerry Kelly then said:

The LG published the “Regulations respecting Open Competitive Examinations for Clerkships in the Second Division of the Civil Service” on 23<sup>rd</sup> August 1904 and gave further notice of an examination to be held on 18<sup>th</sup> October 1904. Percy competed successfully for this more senior graded clerkship

NB: hard evidence of Percy Ludgate passing this exam has not been found in the LG. The LG announcement for the 1903 exams exists, but only the top 50 were included. Some results were published after Oct-1904 but did not include Percy Ludgate. He may not have made the published list, perhaps through illness.

At least until the 1970s, entry and promotion to civil service staff grades was by exam and medical. Exams took place on a regular basis and successful candidates could then seek a post at that grade. Sometimes the exams were for a specific job within a grade but once qualified, the candidate could request any department or location but there was no guarantee a place anywhere was available. Percy Ludgate passed his first medical but got no offer.

In the above Gerry Kelly says other Irish candidates were offered posts, so there were posts available, but maybe those were not jobs Ludgate wanted or not in the location he wanted. If he was not offered an acceptable post, it is not clear how long he would have stayed in the pool. Also it is not clear whether when stepping down from the Boy Clerk post he would remain in the pool for level 1 posts, or instead removal from the 'Register' equated to removal from the pool. Nearly a year passed before he took the second medical, which would seem long enough for an acceptable junior post to arise. Even so, this was not the basis of Ludgate's case to the House of Commons.

Instead, although it may have been unusual to take the next level exam without having a job in at previous level, Ludgate took the exams for level 2 and having passed should have gone into the pool for level 2, but was found to be unfit. His case to the House of Commons appears to have been that the medical following his first exam should be remain valid. That he failed the second medical was not disputed. The civil service at the time did expect a high level of fitness and encouraged athletic pursuits though after-hours activities. At the time there were no 'fast tracks' and the Civil Service Commission had to follow procedure even though he was top of the class.

Was his health very bad? Perhaps his illness was evident even at his first medical; he does look sallow. His health is very likely to have been the predominant issue. Other aspects, discussed below, are very unlikely to have been contributory.

Firstly even up to the middle of the 20<sup>th</sup> century the civil service preferred classicists. It would not be surprising if his ability at mathematics was not then considered useful, but he came first in the civil service exams, so he must have been strong in classics.

Secondly the civil service may have avoided appointing nationalists, but his family were of the established church, members of the Episcopalian or Unitarian church,

considered part of the Anglo-Irish Protestant community, loyal to the UK. Some notable Protestants were nationalist, but were such a minority in that community that the probability of Ludgate being nationalist is extremely low, and certainly Ludgate is absent from the Irish Military Archives [54].

Finally, Drumcondra was in the North Dublin constituency, where the MP was John Joseph Clancy, a highly educated nationalist politician and KC. The MP that took Ludgate's case, Timothy Charles Harrington, was a Corkman who became Lord Mayor of Dublin three times from 1901–04, owned two newspapers (*United Ireland* and *Kerry Sentinel*), was a member of the 'Bantry band' of prominent nationalist politicians, and also a highly educated KC (including at Trinity College Dublin). He was MP for Dublin Harbour, a hotbed of Sinn Féin and Irish Republican Army activity. Why would he waste a valuable opportunity to question the House of Commons on an unqualified non-constituent denied a civil service post after a failed medical? Was there a prior relationship? Most of Percy's uncle William Joseph Ludgate's family in Cork worked for a newspaper in Cork. Or perhaps these educated MPs recognised the loss of a prodigious talent. **This needs to be explored.**

His main civil service file may have been destroyed in the Customs House or Four Courts fires, but that it was discussed in the House of Commons must mean a file circulated in Westminster, and so **this civil service file may survive in the UK.**

Harrington and his son Niall's papers [53] are in the National Library of Ireland:

The collection also includes additional papers of his father, Timothy C. Harrington MP, BL (1851-1910), most of whose papers were already in the National Library for many years (Mss 5384-88; 8576-95; 8930-34, 9210-11).

Also the **United Ireland and Kerry Sentinel archives might mention Ludgate.**

### 2.3. Percy Ludgate's illness

Ludgate's early health issues are a mystery. In the photograph he looks sallow and wan, but with square shoulders and a normally-proportioned chest. In the UK and Ireland, life expectancy was 57yrs in 1922 [62], e.g. as a group, Mary (96), Frederick (45), Percy (38), Alice (40), Alfred (72), died at an average age of 58yrs, so Percy died younger than expected.

Percy Ludgate died shortly after his return from a holiday in Lucerne. He developed pneumonia, and his brother Frederick's widow helped to nurse Percy during his fatal illness, then contracted pneumonia herself and died six days after Percy. The fact his sister-in-law died six days later strongly suggests it was a highly infectious illness, so this does not implicate any prior illness. Perhaps his health was poor and this was a knockout blow, but that causality is weakened by his sister-in-law's death.

His death certificate states cause of death as *catarrhal pneumonia*, which is "an inflammatory condition of localized areas of the lung resulting from inflammation of the terminal bronchioles, capillary bronchitis ... It is due in the majority of cases to infection, and is most common as a sequel to the infectious fevers that are accompanied by bronchitis, as in measles, whooping-cough, and influenza" [70]. It is now known as *bronchopneumonia*, and is usually a result of the spread of infection

from the upper to the lower respiratory tract [71]. However the cause of death on a certificate is best understood by coroners and pathologists, and **needs to be explored**.

The last vestiges of the great Spanish Flu epidemic that killed 20-40 million people, mostly 20-40yrs age, had a very small peak in 1922 [52], see Fig.54:

Bern and Switzerland had three influenza waves during the Spanish pandemic, the first beginning in July, the second in October/November in 1918, and a late third wave in February 1920. A further wave was observed in Bern in January 1922.

Percy died on 16-Oct-1922 (not Jan/Feb-1922), so the causality is again weak. An article in the Irish Times shortly after Percy and Alice died gives an interesting analysis of deaths in Dublin for October 1922, see Fig.55.

A very speculative possibility is Percy and Alice caught TB from Frederick, and could have supported each other, witnessed by Violet (she registered Percy's death). Again speculatively, perhaps his illness in 1904 was TB, then he survived until 1922; those who survived at first could have multiple severe recurrences, so Percy may have gone to Lucerne for mountain air, perhaps to a sanatorium, but then what about Alice? Any speculation that Percy had TB or was in a clinic doesn't explain why Alice died so quickly after nursing him. The counter-speculation is that since bronchopneumonia usually results from infection, this implies Alice died from an infectious disease, which implies Percy did too. However, TB cases were *notifiable*.

There were advances in understanding TB by the early 20th century, but [55]:

After the establishment in the 1880s that the disease was contagious, TB was made a notifiable disease in Britain

50% of those who entered [sanatoria] were dead within 5 years (1916)

BCG vaccine was first used on humans in 1921 in France, but it was not until after WW2 that BCG received widespread acceptance in Great Britain, and Germany

The Ludgates died before treatments for TB became really effective, and before tuberculin tests were used in Dublin. If they exist, lists of notified medical cases need to be explored, even though the stigma of TB led many to avoid its mention as cause of death. The Health Protection Surveillance Centre (HPSC) only have data on TB cases back to 1998. **The Department of Health may have data back to the 1950s, and this needs to be explored.** Archives in the Edward Worth Library at Dr.Steeven's Hospital, in the library at the Royal College of Physicians of Ireland (RCPI), and at Peamount Hospital (which in the past had a rich archive) all need to be explored.

Percy Ludgate's early ill health could be said to remain a mystery.

## 2.4.Percy Ludgate's wartime role

Brian Randell says:

During the 1914-18 war he worked for a committee, set up by the War Office, headed by Mr. T. Condren-Flinn, senior partner of Kevans and Son. The task of this committee was to control the production and sale of oats, over a wide area of the country, in order to maintain a supply for the cavalry divisions of the army. This

involved planning and organisation on a vast scale and Ludgate was much praised for the major role that he played.

Gerry Kelly says:

According to the 1911 Census, Percy was working as a Commercial Clerk at a Corn Merchant [26]. It could be that his experience in this business qualified him to be included on the associated War Office Committee “headed by Mr. T. Condren-Flinn, senior partner of Kevan & Son” [8]. If he had not already been working for this accountancy firm, the assignment may have introduced him to them and the offer of a staff position. It is ironic that having been rejected by the State, his later contribution to the War Effort would be so valued.

However, it is not known where Ludgate was praised and how, e.g. whether he received a letter or an award.

There is no indexed reference to Condren-Flinn or Ludgate in the UK National Archives, but there is a mention of the ‘Oats Control Committee’:

Reference: MUN 4/6489

Description: WAR OFFICE: DEPARTMENT OF SURVEYOR GENERAL OF SUPPLIES:  
Miscellaneous papers concerned with: War Office expenditure Staff of Surveyor General of Supplies Functions of Contract Branch Stores Advisory Committee Departmental Contracts Committee Tonnage Priority Committee Forage Committee **Oats Control Committee** Reconstruction Committee Control of wool trade Control of cotton trade Boot polish Labour Organisation of Finance Branch of Ministry of Munitions

Date: 1915 Sept. 10-1917 Aug.

The papers of this committee need to be examined.

The National Archives of Ireland has a few documents relating to Condren-Flinn but these are in respect of insurance claims processed by Kevans & Sons for damages sustained in Easter 1916. There are no references in the Findmypast British and Irish Newspaper collections other than T.Condren-Flinn attended a 1917 memorial service.

## 2.5. Rathmines College of Commerce

The Rathmines College of Commerce was subsumed into the Dublin Institute of Technology (DIT) in 1992. Its former site at 143/149 Rathmines Road Lower is now one of the DIT campuses. Note that ‘Rathmines College of Commerce’ is not related to the ‘Rathmines College’, which is a nearby private college located in the Town Hall, Rathmines.

The Dublin Institute of Technology (DIT) was established as an autonomous institution by the DIT Act 1992, although its origins go back to 1887 and the establishment of technical education in Ireland. The act merged six colleges of higher education formerly under the City of Dublin Vocational Educational Committee:

- (1) College of Technology, Kevin Street, founded 1887
- (2) College of Music, Chatham Row, founded 1890
- (3) College of Commerce, Rathmines, founded 1901
- (4) College of Marketing and Design, Mountjoy Square, founded 1905
- (5) College of Technology, Bolton Street, founded 1911
- (6) College of Catering, Cathal Brugha Street, founded 1941

It is not known whether DIT preserved the Rathmines College of Commerce archives.

2018 may be an important year for DIT:

The building at 143/149 Rathmines Road has been vacated by the Dublin Institute of Technology which has relocated staff to a new extension to its Aungier Street campus.

The property is held by DIT on a 35-year lease dating from 1983 and has 14 years left to run. [*i.e. to 2018*]

From an informative article in the Irish Times 24-Mar-2004:

<http://www.irishtimes.com/business/commercial-property/former-college-of-commerce-in-rathmines-for-rent-sub-lease-1.113682>

## 2.6. Kevans & Son, accountants

Very little is known of Kevans & Son, accountants. This needs to be investigated.

## 3. Where Percy Ludgate lived

It is known that Percy Ludgate lived in up to four different places during his life.

### 3.1. Home 1: Townshend Street, Skibbereen

Percy Ludgate was born in Townshend Street, Skibbereen, in 1883.

### 3.2. Home 2: Unknown

It is not known where Percy Ludgate and his family lived from 1883 to 1890. This needs to be investigated further.

### 3.3. Home 3: 28 Foster Terrace, Dublin City North

From 1890 to 1898 Percy Ludgate and family lived at 28 Foster Terrace, Dublin City North.

### 3.4. Home 4: 30 Dargle Road, Drumcondra

On Thursday 29-Jun-2017 Dr. Brian Coghlan visited 30 Dargle Rd, Drumcondra, home of Percy Ludgate from 1899 until his death in 1922, and where he did his famous work. From the front it is very recognisably Victoriana. In Fig.63 it is the house with the grey door beside one with a black door. These houses are deceptive, as the land slopes down so they have two storeys at the rear. Also see Fig.64.

Unfortunately the old lady who owned the house next door (with the black door) died a couple of months before at an advanced age, so it was for sale. She would probably have known Mary & Alfred Ludgate, Percy Ludgate's mother (d.1946) and brother (d.1953). It would be useful to ask local people to locate older residents in that vein.

The young couple who now own 30 Dargle Rd bought it 6 years previously and then completely refurbished it to a high internal standard. They remember from the deeds

that it was built c.1890, so it seems (see further below) that the Ludgates moved into it when new. The owners intend to look at the deeds to establish ownership, inheritance and sale history, which is an excellent idea, as the lives of Mary, Alfred and Percy, their home at 30 Dargle Rd, and their wills may well provide the best links to evidence that might point to drawings and papers. The Valuation Office may also help. There remains the puzzle of why Michael Ludgate lived apart.

The young couple bought it from an old lady who had lived there for 30 years, so may not have even known of the Ludgates. They felt they could vouch that they were the first to renovate the house internally, although there was a flat-roof kitchen extension added at some earlier date. The young couple had the floors and ceilings removed, and the only things found were newspapers above a partition wall, presumably to stop draughts. They did expect to find something, as the parlour (the room at the front with the two-window bay) had a 14-foot ceiling, above which was an inaccessible void, but there was nothing there. They lowered that ceiling to add a bedroom above with the skylights in the front roofing. Hence it is fairly certain that Ludgate's drawings were not hidden in the attic or underfloor.

The external walls, downstairs flooring, roof, stairs/banisters as far as the landing (an extremely well matched further landing & banisters was added for the new bedroom), parlour fireplace, and front door were original. Almost everything else was new. To sit/stand where notable predecessors have been, to use the same doorhandle, etc, is very interesting.

The young couple did not know of Ludgate, and proved to be thoughtful and interested, and very receptive to having a blue plaque to honour Ludgate on their frontage, but that's an issue that should be given time to digest and be careful over. They intend to enquire about older residents as well.

From Thoms Directory it can be seen that Dargle Rd was developed from the late 1880s to late 1890s. By 1897 house no.30 existed but was vacant. In 1898 it was occupied by Mrs. Williamson. Then from 1899-1935 the Ludgates lived there, as confirmed by the 1901 and 1911 Censuses, the 1915 Dublin City electoral register, and the sample of Thoms Directories listed below, but in 1936 it is shown as vacant, presumably on the death of Percy's mother Mary Ludgate.

Year	Address	Occupier	Comment
1889	13 Dargle Rd	Emile Jugla artist	No.1-13 listed
1890	13 Dargle Rd	Emile Jugla artist	No.1-13 listed
1891	Dargle House, Dargle Rd	Emile Jugla artist	No.1-16 listed
1892	Dargle House, Dargle Rd	Emile Jugla artist	No.1-16 listed
1893	Dargle House, Dargle Rd	Emile Jugla artist	No.1-16 listed
1894	Dargle House, Dargle Rd	Emile Jugla artist	No.1-16 listed
1895	Dargle House, Dargle Rd	vacant	No.1-21 listed
1896			No.1-27 listed
1897	30 Dargle Rd	vacant	No.1-37 listed
1898	30 Dargle Rd	Mrs. Williamson	
1899	30 Dargle Rd	Frederick Ludgate	
1900	30 Dargle Rd	Frederick Ludgate	
1901	30 Dargle Rd	Frederick Ludgate	
1902	30 Dargle Rd	Alfred Ludgate	
1903	30 Dargle Rd	Alfred Ludgate	
1904	30 Dargle Rd	Alfred Ludgate	

1905	30 Dargle Rd	Alfred Ludgate	
1922	30 Dargle Rd	Alfred Ludgate	
1929	30 Dargle Rd	Alfred Ludgate	
1930	30 Dargle Rd	Alfred Ludgate	
1931	30 Dargle Rd	Alfred Ludgate	
1932	30 Dargle Rd	Alfred Ludgate	
1934	30 Dargle Rd	Alfred Ludgate	
1935	30 Dargle Rd	Alfred Ludgate	
1936	30 Dargle Rd	vacant	
1937	30 Dargle Rd	vacant	
1938	30 Dargle Rd	J.J.McDonnell	
1939	30 Dargle Rd	J.J.McDonnell	
1940	30 Dargle Rd	J.J.McDonnell	

It may be that the family were either leasing the house long-term (not unusual then) or perhaps it was a council house, but most likely it was rented from a private owner, as Percy Ludgate's will includes settlement of rent of £5.18s.8d to Miss Lennon, 78 Queen St. On the other hand the long period of vacancy after Mary died may indicate a sale of the property. The question is who owned the family home at 30 Dargle Rd, and then who owned it once Mary died? **This needs to be investigated further**, perhaps through property ownership or by examination of the deeds.

#### 4. Percy Ludgate's family context and related questions

Please note what follows raises research questions relating to Percy Ludgate's family as well as additional contextual information, not the known genealogical facts, which are detailed in the appropriate section further below.

The following details of Percy's immediate family have yet to be found:

Michael Edward Ludgate: [death cert, will]  
 Mary Ludgate ne McMahan: [will]  
 Thomas Edward Ludgate: [death cert, will]  
 Bridget (Bedelia) Ludgate ne Buckley: [death cert, will]  
 Thomas & Bedelia's child [birth cert & death cert]  
 James Ludgate: [death cert]  
 Augusta Ludgate: [will]  
 4 x unknown Ludgate siblings: [birth cert & death cert]  
 Frederick Ludgate: [will]  
 Alice Emily Ludgate: [birth cert, will]  
 Alfred Ernest Ludgate: [will]

The details are expanded below. It is desirable to get concrete evidence (certificates). If not so indicated then these have been obtained or ordered.

Michael Edward Ludgate  
 b.1839 c.8-Feb-1840 Kilshannig by Mallow, Co Cork  
 d.26-Jan-1923, buried Belfast City Cemetery, memorial ID 191435158, Belfast, Northern Ireland  
 [death cert, will]  
 Mary Ludgate ne McMahan  
 b.19-Nov-1840, c.20-Dec-1840 Iden, Sussex UK GRO Vol.7 p.384, F:Thomas McMahan

d.22-Aug-1946

m.15-Aug-1863 Michael Edward Ludgate, St Thomas, Winchester 2c 175 UK GRO

[will]

Thomas Edward Ludgate

b.Q4/1865 c.15-Oct-1865 Winchester

d.Q1/1951 Lewes UK GRO 5h 591

m.24-Apr-1888 Bridget (Bedelia) Buckley

[death cert, will]

Bridget (Bedelia) Ludgate ne Buckley

c.16-Mar-1856 StPeterPaul, Cork City

d.Q1/1934 Newhaven UK GRO 2b 281

m.24-Apr-1888 Thomas Edward Ludgate

[death cert, will]

Thomas & Bedelia's infant daughter:

Eileen Mary Ludgate b.21-Mar-1892 RoseVille, Sundays Well, Cork City, d.28-Apr-1892

[birth cert & death cert]

James Ludgate

b.1-Jul-1866 Bangalore, Madras, India

d.[????]

[death cert]

Augusta Ludgate:

b.3-Mar-1871 c.04-May-1871 Bellary, Madras, India

d.30-Dec-1954 Watford

[will]

4 x unknown Ludgate siblings

b.[????]

d.[????]

[birth certs, death certs]

Frederick Ludgate

b.17-Jun-1875 Milton Barracks, Gravesend, Kent

d.2-Dec-1921 Richmond Rd, Dublin

m.27-Aug-1900 Alice Emily Walshe

[will]

Alice Emily Ludgate ne Walshe

b.3-Aug-1875 South Dublin

d.22-Oct-1922 Drumcondra Dublin

m.27-Aug-1900 Frederick Ludgate

[birth cert, will]

Alfred Ernest Ludgate

b.1-Apr-1881 Skibbereen Co.Cork

d.3-Sep-1953 Drumcondra Dublin

[will]

#### 4.1. The 'Liverpool' Percy Ludgate

It is recorded in official Irish civil records that Percy Edwin Ludgate was born in Skibbereen on the 2-Aug-1883, the son of Michael Ludgate and Mary McMahan.

This may not be strictly true. In the records there is a second Percy Ludgate born 1883 in Liverpool with a father Michael who resided in Lancashire. Michael was discharged in 1882 in Winchester. It is conceivable that he was on his way home and Percy was born en-route after his father's discharge, registered before embarking on the ferry, then registered a second time in Skibbereen where he collected his pension; this was illegal but did happen. There was often a delay between discharge and collecting a pension usually due to paperwork catching up. On the other hand, this

'Liverpool' Percy could be the Percy T.Ludgate who died 1946 in Runcorn, Cheshire. The **Liverpool birth certificate needs to be checked.**

#### 4.2.Percy Ludgate's immediate family

Percy Ludgate's father Michael's military career began when he signed up in 1858. The army was desperately trying to replace troops lost in the Crimea. Michael signed up with four other members of the North Cork Militia [44], including Robert and David Ludgate (who might be related, possibly brother Robert, less possibly brother David who would have been too young to join). It could be that their experience in the militia gave rise to their rapid promotion in the army.

Robert and David stayed with the 21<sup>st</sup> Foot for the whole of their career. But a David Ludgate who appears to have joined the army the same day as Michael Edward, also appears to have joined the civil service. A letter is said to survive from the vicar of Kilshannig confirming his age, but **this needs to be confirmed** with evidence. It is possible this was Percy's uncle, but unlikely as he was too young to join.

Within 2 weeks Michael was promoted to Corporal and one year later to 'Sergeant Musketry Instructor'. For the final years of his service Michael was with the School of Musketry which, in addition to teaching marksmanship, was also responsible for evaluating new rifles etc. They seem to have a systematic testing program which included workshop capability. Some of their reports are available for download from the National Archives. This appears to be the only circumstances in which a Ludgate could have acquired engineering skills that might have been useful to Percy Ludgate. From [45]:

To return to 1853 and the formation of the school. The Army now had the Minie bullet and Rifle that shot further, more accurately than previous weapons, soon to be superseded by the popular 1855 .577 Enfield. Now shooting became a personal skill rather than a Drill movement. The decision was made to create an "establishment for the instruction of the Army in rifle and target practice". Staffed by a corps of experts that was able to train up regimental instructors in shooting skills. They returned to their regiments to train the troops in marksmanship. The wild and pebbled beaches of Hythe were decided as the most appropriate area as all shooting could be directed safely out to sea. The did not consider "butts", as we know them today, necessary.

By this time the army had started using civilian teachers and trainers and his move to the School of Musketry may have been a prelude to this; it is unlikely that he turned up at Hythe on the off-chance they would give him a job. There were plenty of regiments recruiting all over Ireland. There was a depot at Shiffnall where four Ludgates, including a Frederick, were registered in the time after Michael left Winchester. Michael must have had significant rifle experience before Hythe. There is a possibility that he was a member of the Cork Militia and may have returned there as his final assignment. The various muster documents should give his movements between 1858-1863 prior to marrying Mary. **These need to be examined.**

Some uncertainty exists about Percy's mother Mary Ludgate nee McMahan and her parents. It seems fairly certain that she was born in England of Irish parents, one a soldier and the other possibly a soldier's daughter. **Proof is needed.**

Another question arises because Gerry Kelly suggested that a brother James Ludgate was born in 1866 in Bangalore, India, but no trace of him has been found yet. He is not listed in the England, Ireland or India indexes, and once Michael returned from India he moved into married quarters and the number and ages of his children are listed every quarter, where their ages fit for Thomas, Augusta and Frederick (born in the married quarters), and there are no other children until Alfred in Skibbereen. By the 1911 Census the implication is that James had died, although his birth and death **need to be confirmed with evidence** (UK GRO Indian dates/indexes need to be found and certificates acquired). But if these are confirmed then Michael must have been stationed in India in the mid-1860s as well as the known period in the early-1870s.

Gerry Kelly created further questions when he suggested two unknown siblings were born after 1871, followed by a known surviving elder brother (Frederick) born in Gravesend in 1875, then subsequently two more unknown sibling births. As for James, **these unknown siblings need to be confirmed with evidence** (dates/indexes need to be found and certificates acquired). **The muster books in the National Archives may show exactly where he was stationed.** Note that Frederick was born at Milton Barracks, Gravesend, Kent, whereas he stated in the 1911 Census that he was born in Winchester, but the Army Musters show that the family acquired an extra member just before Michael left the army in Dec-1876 in Chatham where he was stationed after he returned from India, so Frederick could have been under the impression he was born in Winchester.

Michael Ludgate's final months in the army were spent assigned to Corps of the Small Arms School. His service record shows his profession as a Clerk. He left the army as a small arms instructor in 1876 with a ticket to Cork. His Army record shows he was discharged in Dec-1876, then the family appear to have moved to Skibbereen, Co.Cork. Percy's last brother Alfred was born in 1881 there, Michael's pension record appears to show his pension being collected there in 1882, then Percy Ludgate was born there in 1883. Thereafter their whereabouts are unknown for the next 7 years. Where were they from 1883-1890? There is no hint thus far of what Michael did in Cork. **Directories for Cork in the 1880 need to be found** (directories were being published during the 1880s and may be in a local library or the National Library of Ireland). There is also in MyHeritage:

Michael Ludgate (in MyHeritage Family Trees, Browne Family Tree in Browne Family, managed by Mary Louise Browne (Contact)  
 Birth: Feb 8 1840  
 Parents: Robert Ludgate, Susanna Ludgate  
 Siblings: Thomas Ludgate, Mary Anne Farmer (born Ludgate), Elizabeth Alicia Ludgate, Robert Ludgate, Richard Ludgate, David Ludgate, William Ludgate

The contact Mary Louise Browne lives in Cork and may have information about Michael Ludgate's movements in Cork and elsewhere after 1876; **this needs to be explored.**

Meanwhile Thomas Ludgate married Bridget (Bedelia) Buckley on 24-Apr-1888 in Cork and settled in the environs of Cork City (Bedelia is a baby version of Bridget). Bedelia and Thomas had one child, their daughter Eileen Mary, who was born in 1892 and died five weeks later, at Roseville, a two story house in Cork City up the hill on the east side of the River Lee, opposite the gaol, see: <https://www.daft.ie/cork/houses-for-sale/sundays-well/roseville-strawberry-hill-sundays-well-cork-2162910/>

There are two strong candidates for Bridget Buckley in the records. The first was from Sycamore, a townland just north of the Doneraile town and demense, near Mallow, Co.Cork, the second from Douglas, just south of Cork City. In Bridget's wedding certificate her father Maurice is a farmer, and her bridesmaid was Cecilia Buckley. It is this Cecilia Buckley that leads to the correct Bridget Buckley. A Cecilia Buckley with father Maurice, farmer, married a John Buckley in 1888. Before marriage both Bridget and Cecilia lived at 7 Thornville Place, Cork City, so these were clearly sisters. And then Bridget Ludgate registered the death of "her sister" Cecilia Buckley, who died of puerperal fever in 1893, seven days after the birth of a daughter Cecilia (1901 and 1911 Censuses show John with daughter Cecilia age 8 and 18).

Bridget registered her sister as age 31 at death (b.abt.1862), and also declared her own age as 37 (b.1864) in the 1901 Census and 46 (b.1865) in the 1911 Census. In contrast her husband Thomas Ludgate declared her age as 77 in her 1934 death cert (b.abt.1857). In fact the ages were almost certainly understated, as was common amongst women then. Bridget Buckley was actually baptised in 1856 by Maurice Buckley and Ellen Desmond in Cork City, and Cecilia Buckley was baptised in 1858 by Maurice Buckley and Elizabeth Desmond in Douglas, just south of Cork City ("Ellen" is a diminutive of Elizabeth, Eleanor or Helen). Furthermore, Cecilia's bridesmaid was Anna M.Buckley, and an Anna Maria Buckley was baptised in 1865 by Maurice Buckley and Ellen Desmond in Douglas. Cecilia lived and died at Vista Villa, 124 Sundays Well, Cork City, see: <http://www.buildingsofireland.ie/niah/search.jsp?type=record&county=CC&regno=20862125>

Maurice Buckley b.abt.18xx, farmer, Douglas, Co.Cork  
 m.30-Nov-1850 Ellen Desmond, b.abt.18xx  
 [Ellen Desmond's parents are said to be Patrick Desmond & Johanna Mahoney]  
 [Ellen Desmond's is also said to have a brother Daniel Desmond who married Catherine Enright]  
 Margaret Catherine Buckley c.24-Nov-1851 St.PeterPaul, Cork City  
 Catherine Ellen Buckley c.17-Jul-1853 St.PeterPaul, Cork City  
 Mary Anne Buckley c.12-Feb-1855 St.PeterPaul, Cork City  
**Bridget (Bedelia) Buckley, c.16-Mar-1856 Cork, d.Q1/1934 Newhaven, UK**  
**m.24-Apr-1888 Thomas Edward Ludgate, b.23-Sep-1865, d.Q1/1951, Lewes, UK**  
**Eileen Mary Ludgate b.21-Mar-1892 RoseVille, Sundays Well, Cork City, d.28-Apr-1892**  
 Cecilia Buckley c.10-Feb-1858 Douglas [M:Elizabeth Desmond], d.7-Mar-1893  
 m.11-Oct-1888 John Buckley, b.abt.1857  
 Daniel Maurice Buckley, b.23-Sep-1891, 124 Sundays Well, Cork City  
 Cecilia Mary Buckley, b.1-Mar-1893, 124 Sundays Well, Cork City  
 Helena Buckley, c.4-Mar-1860 Douglas, Cork  
 Maurice John Buckley, c.19-May-1861 Douglas, Cork  
 Michael Joseph Buckley, c.28-Sep-1862 Douglas, Cork  
 Denis Maurice Buckley, c.17-Jan-1864 Douglas, Cork  
 Anna Maria Buckley, c.Jun-1865 Douglas, Cork  
 Elizabeth Mary Buckley, c.8-Sep-1869 Douglas, Cork  
 Emily Buckley, c.30-Apr-1871 Douglas, Cork

Descendants of Cecilia's children Daniel and Cecilia may exist and may have photos, etc, so **this needs to be further investigated.**

Returning to Michael Edward Ludgate, in 1890 he (and Augusta and Frederick) re-appeared in Dublin: Thom's Irish Almanac of 1890-98 for Dublin shows them as shorthand teachers, tantamount to a family business. From 1891 Frederick (aged 16) taught, and from 1892 onwards the reference to 'sons' implies Alfred (aged 11) and/or Percy (aged 9) also taught:

Year	Thoms Directory entry for 28 Foster Terrace, Dublin
1890	Ludgate, Michael Edward, teacher of shorthand

1891	Ludgate, Michael Edward, teacher of shorthand, Ludgate, Fred, teacher of shorthand, Ludgate, Miss Augusta, teacher of shorthand,
1892	Ludgate, Michael Edward, sons & daugh, teachers of shorthand
1893	Ludgate, Michael Edward, sons & daugh, teachers of shorthand
1894	Ludgate, Michael Edward, sons & daugh, teachers of shorthand
1895	Ludgate, Michael Edward, sons & daugh, teachers of shorthand
1896	Ludgate, Michael Edward, sons & daugh, teachers of shorthand
1897	Ludgate, Michael Edward, sons & daugh, teachers of shorthand
1898	Ludgate, Michael Edward, sons & daugh, teachers of shorthand

Note Foster Terrace (and indeed Ballybough in general) appears to have housed a high concentration of Royal Irish Constabulary policemen.

Census	House	Foster Terrace, Ballybough, Mountjoy Census District, Dublin
1901	5	P.Saunders, Police Sgt
1901	14	J.Lawless, Police pensioner
1901	22	W.Richardson, Police Const.
1901	23	P.Sheehan, Police Const.
1901	29	J.Dowd, Police pensioner
1901	36	P.Kennedy, ex R.I.C. head Const.
1911	11	W.Dwyer, Constable
1911	14	T.O,Meara, Constable
1911	29	J.Larkin, Inspector
1911	31	T.Foster, Police pensioner
1911	34	E.O.Reilly, Sergeant

But by 1901 (actually 1899) the family, except Michael, had moved to 30 Dargle Rd.

While at 28 Foster Terrace, Thom's Directory shows them as shorthand teachers. There is no hint of where they learnt shorthand. The following very speculative possibility could be considered: as Timothy Harrington (a Corkman) put Percy Ludgate's case to the House of Commons, was there a prior relationship? Most of Percy's uncle William Joseph Ludgate's family in Cork worked for a newspaper in Cork. Did Harrington or they employ Michael as an aspiring journalist who then had to learn shorthand and taught his children? **Harrington's newspapers (United Ireland and Kerry Sentinel) need to be searched.**

On 8-Sep-1899 Michael was in Kilmainham prison for non-payment of debt, and the 1899 Thoms Directory indicates the remainder of the family had moved to 30 Dargle Rd, Drumcondra, where Frederick as the nominal householder. By then Percy would have been 16 years old, already earning in an income as a Boy Copyist in the Civil Service, and both his elder brothers are likely to have been earning income too. **The source of Michael's debt needs investigation.**

Then by the 1901 Census Michael Ludgate was living by himself at 2 Quay St, Balbriggan, 28kms from his wife and family at 30 Dargle Rd, Drumcondra, so this might indicate a marital separation after serving time in prison. The census enumerator's abstract Form N says the house is two-storey house with stone or iron or brick or concrete walls, slate or tile roof, 5 or 6 rooms (with 5 rooms occupied by only Michael), two windows at front, in census terms a 2<sup>nd</sup> class house, which corresponds to the present ~80sqm terraced house at 2 Quay St, situated in the heart of old Balbriggan, adjacent the train station, viaduct, harbour and front strand beach, quite similar to 30 Dargle Road, and generous if basic accommodation for one person.

Interestingly, although 2 Quay St can be found on Google Maps, the street is absent from the Balbriggan entries in Thoms Directories, but there is a Quay St in nearby Skerries. Balbriggan and Skerries electoral registers may yield more information. **This needs investigation.**

Whatever about Michael, the rest appear to have been a close knit family, for example Frederick is shown in Thom's Directories for 1899-1901 as the resident of 30 Dargle Rd (thereafter it shows Alfred), but after marrying in Aug-1900 the 1901 Census shows he and family just six doors away at 24 Dargle Rd, and the 1911 Census shows them at 17 Carlingford Terrace, the street behind Dargle Rd. In the interim they may have moved to Tullamore, as their last two children were born there, or perhaps there was just a family connection to Tullamore that led to the births taking place there. The Dublin electoral register does enlighten as it only shows Frederick at 17 Carlingford Terrace in 1912. **Thoms Directories needs to be explored.**

Alice gave birth to an infant son Percy born 19-Mar-1901 and died 1-Apr-1901, who appears on the 1901 Census, which was taken on the 31st March 1901. The 1901 Census says Alice was age 24, implying she was born birth between 1-Apr-1876 and 31-Mar-1877. The 1911 Census, which was taken on 2-Apr-1911, says she was age 35, implying she was born birth between 3-Apr-1875 and 2-Apr-1876. On this basis she must have been born between 3-Apr-1875 and 31-Mar-1877.

There are five strong candidates for Alice Walsh(e) born in era:

Date	Name	Address	Father	Mother
13-Jul-1875	Alice Maud Marie Walsh	11 Clanbrassil Terrace, Rathmines, South Dublin	Thomas Walsh, upholsterer	Alice Picot
3-Aug-1875	Alicia Walshe	1 Erne Terrace, South Dublin	William Walshe, stoker	Mary McFarland
27-Nov-1875	Alice E. Walsh	Milltown, South Dublin	James Walsh, groom	Eliza Sheedy
13-Oct-1876	Alice Anne Walshe	Green Street, Kilkenny	William Walshe, shoemaker	Anna Maria Doran
1-Jul-1877	Alice Mary Babtiste Walshe	11 Clanbrassil Terrace, Rathmines, South Dublin	Thomas Walsh, weaver	Alice Picot

The Alicia Walshe born 3-Aug-1875 in South Dublin to William Walshe and Mary Walshe nee McFarland of 1 Erne Terrace (a tenement), and baptised in St. Andrew's Church, is the only Alice with father William as per wedding cert, and born in Dublin City as per 1901 and 1911 Censuses (Erne Terrace is a terrace parallel to the north side of the railway just east of Pearse Station in Dublin City). Her father William Walshe of 24 Albert Place (not the occupier, so presumably a lodger) married Mary McFarland of 2 Albert Court (a tenement) in St. Andrew's Church on 23-Feb-1873 (Q1 Vol.2 p.847). Neither this marriage nor Alice's birth were of Church of Ireland, but it is possible Alice converted to Church of Ireland before the 1901 Census when she is of that church. Alice had two sisters, Mary Alice and Eleanor:

William Walshe  
 m. Mary  
 William Walshe b. abt. 1843 Wexford, d. 18-May-1901 Dublin  
 m. 23-Feb-1873 Mary McFarland c. 7-Apr-1851  
 F: John McFarland, M: Alice Murphy  
 Alice McFarland c. 1845 Dublin  
 Margaret McFarland c. 1856 Dublin  
 John McFarland c. 1858 Dublin

Mary Alice Walsh b.23-Feb-1874, 33 Clarendon St, South Dublin  
 Alice Emily Walshe b.3-Aug-1875, 1 Erne Terrace, South Dublin, d.22-Oct-1922 Drumcondra  
 m.27-Aug-1900 Frederick Ludgate b.17-Jun-1875 Gravesend Kent, d.2-Dec-1921 Drumcondra  
 Percy Ludgate b.19-Mar-1901 Drumcondra, d.1-Apr-1901 Drumcondra  
 Violet Ethel Ludgate b.7-Apr-1903 Tullamore, d.19-Apr-1987 Dublin  
 Frederick Ludgate b.4-Mar-1906 Tullamore d.20-Mar-1906 Tullamore  
 Eleanor Walshe c.8-Apr-1877, 9 Margaret Place Dublin

Thomas and Bedelia Ludgate remained in the environs of Cork City.

Census	Address	Residents
1901	13 Mardyke (Cork Urban No.7)	Thomas Edward Ludgate, head,35, b.England (Winchester) Bedelia Ludgate, wife, 37, b.Co.Cork
1911	173 Gurteenaspig, (part or rural) Bishopstown Cork	Thomas Edward Ludgate, head,45, b.England Bedelia Ludgate, wife, 46, b.Co.Cork

The census also stated that one child was born alive, but none were still living, as their infant daughter Eileen was born and died in 1892.

Michael Ludgate is not in the 1911 Census. He would have had a decent army pension so it would seem unlikely he would just disappear. When/where/how did Michael Ludgate go? One intriguing entry in the 1911 Census states the Royal Hospital for Incurables in Bloomfield Avenue had a patient with Surname "L" and initial "E M" born in 1840. Michael Ludgate's prison record indicates his health was failing, so **if this hospital's records still exist then they need to be explored.**

In fact Percy's father Michael Edward Ludgate, missing after the 1901 census, was living in Omagh in 1911 as Edward Ludgate, single and an army pensioner. He was a lodger in William John Milligan's house, a commercial clerk and "pork buyer". There was a commercial traveller also boarding, so the connection may be Michael's occupation, given as a commercial traveller in the 1901 Census. In 1919 he applied for one of the new state pensions and died in Belfast in 1923 as Michael, single, in the Union Infirmary and was buried in the Belfast City Cemetery. The Union Infirmary was part of the Workhouse system but was probably the only healthcare available to a single, old man. The burial was arranged and paid for by the Infirmary in the City Cemetery which suggests a pauper's grave.

Michael Edward Ludgate  
 d.26-Jan-1923, buried Belfast City Cemetery, memorial ID 191435158, Belfast, Northern Ireland

**As he died single the question is was there a divorce?**

Percy Ludgate's mother Mary Ann Ludgate ne McMahon was is said to have been baptised in 1840, but **this needs to be confirmed.** The following misspelt entry has proven to be for her death.

Name: MARY Leedgate  
 Year of Death: 1936  
 Group Registration ID: 1470827  
 SR District/Reg Area: Dublin South  
 Deceased Age at Death: 96

See Fig.31 for a transcription, also [60]. This tallies with the information from Randell [8] that she died aged 96 years in Dublin. Until this entry was found Mary Ludgate was a mystery, missing under 'Ludgate' from the indexes for 1936-8 and 1943-50 in the research annex of the Dublin BMD. She was said to have been born in 1841 and died in 1946 aged 97 (which doesn't add up), so that was an error. She actually died in 1936 as above, in St.Kevin's Hospital (now called St.James's), which

was then a site with a number of small hospitals (St.Kevin's being the largest), having originally been the site of the south Dublin workhouse, see [61], also see a very sobering history at [62].

Once Mary died there were only three known surviving descendents: Percy's brothers Thomas and Alfred, sister Augusta, and their niece Violet.

Sometime after the 1911 Census Thomas and Bedelia Ludgate moved to the environs of Peacehaven, between Brighton and Eastborne. Bridget died there in 1934, and in the 1939 UK Registration, widower Thomas Ludgate, with exactly the correct birthdate, was living in Blue Hazel Cottage, Chailey Road, Sussex (10 miles north of Newhaven, and 16 miles from Peacehaven). Thomas died in 1951:

Bridget Buckley c.16-Mar-1856 Cork, d.Q1/1934 Newhaven UK GRO 2b 281  
Thomas Edward Ludgate b.23-Sep-1865 Winchester, d.Q1/1951 Lewes UK GRO 5h 591

Further details of the locale and/or any descendent(s) need to be found.

When Percy's brother Alfred administered Percy's probate he declared himself an accountant employed at George Drevar Fottrell & Sons, 46 Fleet St, Dublin, presumably with a reasonable income. But where did Alfred live after his mother's death? The Dublin City electoral register 1937-63 [64] shows the following entries:

Name	Years	Unit	Polling	Elect.No.	House	Street
Mary Ludgate	1937-38	Drumcondra	LD	1642	17	Richmond Rd
Alfred E. Ludgate	1939-43	Rotunda	HD	6	2	Belvidere Ave
Alfred E. Ludgate	1949-51	Mountjoy	E.F.B	1258	10	Emmet St
Violet Ludgate	1935-37				43	Leeson St Lower [from UK birthcert]
Violet Ludgate	1937-38	Fitzwilliam	OB	1268	43	Leeson St Lower
Violet Ludgate	1944-45	Pembroke West	FE	2518	39	Wellington Rd
Violet Ludgate	1949-64	Pembroke West	E.T.C		39	Wellington Rd

So from 1939-43 Alfred lived at 2 Belvidere Ave, off the North Circular Rd, and by 1949-51 had moved not far away to Emmet St, again off the North Circular Rd. He died without a stated residential address two years later (1953) in the Royal Victoria Eye & Ear Hospital where his niece Violet was employed as an Alomer's clerk, but his death was registered by the hospital, not by Violet.

Note from the above it appears that the registered elector for 17 Richmond Rd was a Mary Ludgate. This is close to 1 Tolka Villas, Richmond Road, from which Violet Ludgate registered Percy Ludgate's death. **This needs to be explored.** Similarly, in the 1935-41 and 1951-53 Thoms Directories, 4 Belvidere Ave is occupied by an M.Walsh, which prompts the question of whether this was a relative of Frederick Ludgate's wife Alice Ludgate ne Walsh, remembering that Alice had a sister Mary. If so this prompts the secondary question whether this motivated Alfred's residence nearby? In fact in 1900 when she married, Alice Walsh lived at 10 Belvidere Ave, but maybe only briefly as she was married and living at 24 Dargle Rd in the 1901 Census. **This also needs to be explored.**

Year	Address	Occupier	Comment
1922	2 Belvidere Ave	T.Walsh	
1922	4 Belvidere Ave	Mark Vause	
1935	2 Belvidere Ave	Annie Kelly	

1935	4 Belvidere Ave	M.Walshe	
1936	2 Belvidere Ave	Annie Kelly	
1936	4 Belvidere Ave	M.Walshe	
1937	4 Belvidere Ave	M.Walshe	
1938	4 Belvidere Ave	M.Walshe	
1939	4 Belvidere Ave	M.Walshe	
1940	4 Belvidere Ave	M.Walshe	
1941	4 Belvidere Ave	M.Walshe	
1951	4 Belvidere Ave	M.Walshe	
1952	2 Belvidere Ave	Mrs.Brennan	
1952	4 Belvidere Ave	M.Walshe	
1952	21 Belvidere Ave	Let in flats	
1953	2 Belvidere Ave	Mrs.Brennan	
1953	4 Belvidere Ave	M.Walshe	
1953	21 Belvidere Ave	Let in flats	

The creeping subdivision of these buildings into flats is evident.

An M.Walshe also occupies 4 Belvidere Rd (not Ave) from 1935-39, but not 1940-41.

In the 1911 Dublin Electoral Roll a William Walshe is listed as the inhabitant or householder of 27 Foster Terrace, Ballybough, Dublin, *next door to the house occupied by the Ludgates from 1890-98*, but in the 1911 Census he is given as Walsh not Walshe and aged 43 years, too young to be Alice's father, and married to a Catherine not Mary, and he is not resident in that house in the 1901 Census.

**This all needs to be explored** to ascertain whether her daughter Violet Ludgate had maternal uncles, aunts and cousins who might retain relevant material such as photographs.

Previously it was thought that Violet was the last of Percy's close family, dying in 1987, and that there were no close family descendants. However, astonishingly, in December 2018 a descendant was discovered. It was found that Violet gave birth to a baby girl, Barbara Ludgate (also called Barbara Hopkins), in 1935. The father was William Thaddeus Hopkins (father William Hopkins b.1866 d.1909, mother Catherine Coffey d.1906). Subsequently Barbara was privately adopted, taken to a different country, and renamed. Eventually she married, is still alive, and now has children, grandchildren and great-grandchildren:

Frederick Ludgate b.17-Jun-1875 Gravesend Kent, d.2-Dec-1921 Drumcondra  
 m.27-Aug-1900 Alice Emily Walshe b.3-Aug-1875, 1 Erne Terrace, South Dublin, d.22-Oct-1922 Drumcondra  
 Percy Ludgate b.19-Mar-1901 Drumcondra, d.1-Apr-1901 Drumcondra  
 Violet Ethel Ludgate b.7-Apr-1903 Tullamore, d.19-Apr-1987 Dublin  
 partner: William Thaddeus Hopkins b.10-Apr-1897 Clonmel, d.1957 Co.Dublin  
 Barbara Ludgate (b.19-Aug-1935 Brighton)  
 Six children  
 Seven grandchildren  
 Six gt.grandchildren  
 Frederick Ludgate b.4-Mar-1906 Tullamore d.20-Mar-1906 Tullamore

Since previously it was thought that because there are no descendants, an interesting byproduct of this sad conclusion was that there were no related data protection issues.

Now this conclusion no longer holds in principle, but in practise the grandchildren have been extremely helpful.

Violet Ludgate was an Alomer's clerk in the Eye & Ear Hospital, and the Dublin City electoral register shows that from at least 1943 she lived at the Garden Flat, 39 Wellington Rd, Dublin (NB: in 1943 she is listed as Veronica Ludgate). Her probate shows that she remained there after retirement until finally she died in St.Vincent's Hospital in Elmpark. She donated her body to Trinity College Dublin for medical research, finally to be interred at Caragh (Cruagh) graveyard.

The following deaths and/or death notices needs to be found (with evidence):

Date of Death	Person	Comment
26-Jan-1923	Michael Edward Ludgate	
2-Dec-1921	Frederick Ludgate	
22-Aug-1936	Mary Ann Ludgate	
3-Sep-1953	Alfred Ernest Ludgate	
19-Apr-1987	Violet Ethel Ludgate	
Q1/1951	Thomas Edward Ludgate	
Q1/1934	Bridget (Bedelia) Ludgate	

All their wills, electoral rolls, residences, employments, later census records than 1911, and burial records, need to be found.

### 4.3.Percy Ludgate's paternal extended family, grandparents and ancestors

The Winchester marriage certificate of Percy Ludgate's father Michael Ludgate gives his paternal grandfather as Robert Ludgate, which tallies with the paternal family tree of Fig.3. Michael was born 1839-40 in Kilshannig (Kilshaingh or Chill Seanaigh), Mallow, Cork, a large townland 3kms south-west of Mallow (note that Kilshannig, Co.Kerry, is a different townland). Griffiths Valuation has a number of Ludgates living in Kilshannig including a Robert, who had a 40 acre farm in c.1850:

**Tenant:**  
Family Name 1: LUDGATE  
Forename 1: ROBERT  
**Landlord:**  
Family Name 2: NEWMAN  
Forename 2: ADAM  
**Location:**  
County: CORK  
Barony: DUHALLOW (PART II)  
Union: MALLOW  
Parish: KILSHANNIG  
Townland: SKARRAGH  
Place Name: SKARRAGH  
Place Type: TOWNLAND  
**Publication Details:**  
Position on Page: 50  
Printing Date: 1852  
Act: 9&10  
Sheet Number: 32,41  
Map Reference: 3

The main property is in Skarragh but part is in Smithfield, see Fig.56. It lies either side of the L1212 near Kilshannig GAA to the east of Glantane (browsing to [68])

shows a map which is switchable between old, modern and satellite views, where red Griffiths numbers in the townland locate the exact plot). The house may be still there.

Most other Ludgates seemed to live in Ballyclough (Ballyclogh), a small village 8kms north-west of Mallow and 5kms north of the Kilshannig townland.

*Trivia: the lead judge in the Ned Kelly trial, Sir Redmond Barry, was from Ballyclogh*

So far as is known Percy Ludgate's family are these Ludgates of Kilshannig, relating back through Michael's birth and the marriage of Robert Ludgate and Susannah Willis.

Parish records are available back to 1731 through 3-4 generations. Families often strayed over parish bounds and marriages were in the bride's parish before she was "carried off" to her husband's parish. The neighbouring parishes were:

Parish	Earliest Records
Kilshannig	1731
Clonmeem	1764
Rosskeen	1764
Ballyclogh	1795 (old spelling for Ballyclogh)
Castlemagner	1810
Mallow	1776
Donaghmore	Burnt?
Mourneabbey	1807

The more wealthy could arrange marriages from further afield but the indication from Griffiths Valuation is that the Ludgates were tenant farmers.

There are microfilms of the church records and indices, some online. There is a record from one of these films on [ancestry.co.uk](http://ancestry.co.uk) for Michael Edward Ludgate christened on 8-Feb-1840 in Kilshannig by Mallow, son of Robert and Susanna [56]. This looks as if it may be a reconstruction following the Four Courts fire, and contains several parishes so may contain many of the Kilshannig Ludgates. The transcriptions of Kilshannig registers are held by Mallow Heritage Centre and are online via Rootsireland.

There is also a reference to the marriage of Robert Ludgate and Susanna Willis in 1837 in the Diocese of Cork and Ross, where the source is an index [67]. If the marriage licences that underlie such indexes still exist they should include ages and parents' names which help in corroboration. In those days being married by licence was quite common, usually when the bride or bridegroom lived elsewhere and would not be known in the parish when the Banns were read out in church (since the laws on marriage changed neither of those constraints remains in force). Licences were issued by the diocese and then taken to a church, sometimes specified in the licence. The earliest Kilshannig marriage register held by the parish of Mallow is for 1845, so they do not have the marriage licence for Robert Ludgate and Susanna Willis, nor do the Diocesan Office of Cork, Cloyne and Ross, who are purely an administrative office. Nor do the Mallow Heritage Centre. The National Archives of Ireland have confirmed that the original Diocesan and Prerogative Marriage Licence Bonds were destroyed in the Public Record Office explosion of 1922, but indexes survive in the NAI, and record Protestant marriages as far back as 1623. The reference to the marriage is from these indexes. **Hopefully an alternative source of information will be discovered.**

A Robert Ludgate died in 1860 aged 64 (i.e. b.1796) at Tullern Cross Dispensary, but noted as of the Parish of Kilshannig. The only Robert born around 1796 was b.1802 to John and Elizabeth Ludgate of Scarragh, Kilshannig, who had children from 1779 to 1804, so **these two Roberts may be different people.**

In addition, the 1766 Religious Census apparently lists a Matthew Ludgate in Kilshannig. The NAI guide to surviving 1766 Census material lists:

1123	Kilshannig	t	NAI	M 5036 (a)
------	------------	---	-----	------------

NAI have confirmed they do not have original returns for Cloyne (specifically Kilshannig), that 't' denotes a transcript, and that the M number is a miscellaneous reference code inherited from the Public Record Office. Indexes to these are held by the NAI. **Again, hopefully an alternative source of information will be discovered,** perhaps in, for example, [65], or perhaps from other descendents, as Matthew Ludgate had 12 children.

Interestingly, a number of the Kilshannig baptisms are marked 'private', which was done (either by the local Rector or whoever was present in the child's home) if the child was sickly. Later the child would be received into the church (there is still a form of service for this in the Church of Ireland Book of Common Prayer of 2004).

As of 8-Sep-2017 the status of research into the paternal ancestors is:

(1) Ludgate

*Matthew & Mary Ludgate:* Unlikely to find anything further. May find Ludgate, Scarragh reference but no corroborating trail.

Regarding the paternal extended family, very little is known. There were five paternal uncles (Thomas, Robert, Richard, David and William) and two paternal aunts (Mary and Elizabeth), and thus far some identified paternal cousins. More detail is given later in the wider Ludgate family tree. There are possibly surviving descendents.

These all **need to be explored:**

Thomas Ludgate b.1838
Mary Alice Ludgate b.1842 d.1865 aged 23 in Cork Lunatic Asylum
Elizabeth Ludgate b.1843
Robert Ludgate b.1845 d.1856 aged 12
Richard Ludgate b.1847
David Ludgate b.1849
William Ludgate b.1853

There are possibly relevant entries in the Mallow burial registers:

Thomas son of Robert Ludgate	d.17-Oct-1838	[in 1837/38/39/40 burials]
Elizabeth 13yrs daug of Robert Ludgate	d.17-Nov-1856	[in 1855/56 burials]
Robert 12yrs son of Robert Ludgate	d.25-Nov-1856	[in 1855/56 burials]

Most of Percy's uncle William Joseph Ludgate's family in Cork worked for a newspaper in Cork by the 1911 Census, and two worked as accountants, and this combination may explain why Timothy Harrington MP was willing to help Percy Ludgate. Robert Willis Ludgate ('RW', the "Lusitania" reporter) was born on 13-May-1883 in Cork. As a son of William Joseph, he was Percy's cousin. In the 1911 Census he had a son of 6 months, Richard Gerald Ludgate. A sister, Margaret Mary Ludgate was born two years later. So descendents may be alive and living in Cork. In fact it is known Margaret married John Joseph Coleman in 1941 and gave birth to a daughter Mary P.Coleman in 1942. Where is this Mary? This **needs to be explored.**

Percy must have had a large number of relatives, in-laws and acquaintances:

Relation	Individuals
Paternal	5 uncles + 2 aunts + at least 7 cousins
Maternal	3 uncles + 1 maternal aunt + (presumably) cousins
In-Laws	Alice Ludgate née Walshe + Bedelia Ludgate née Buckley
In-Law's parents	William & Ellen Buckley (Douglas, Co.Cork) William & Mary Walshe (Dublin City)
In-Law's brothers/sisters	Bedelia Ludgate's (Douglas, Co.Cork): 3 brothers + 8 sisters Alice Ludgate's (Dublin City): 2 sisters
Uncle/Aunt's wives/husbands	At least 1
Cousin's wives/husbands	At least 2
Accountancy	T.Condren-Flinn, senior partner of Kevans and Son
WW1 Committee	T.Condren-Flinn

See the table of close relations and in-laws further below. All this needs to be further explored, as any descendants may have relevant letters, documents, photos, etc.

#### 4.4.Percy Ludgate's maternal extended family, grandparents and ancestors

The following details have yet to be found, if possible to get certs (concrete evidence). If not indicated then Irish certs have been obtained or UK GRO certs are ordered.

Thomas McMahan, b.1806, Ireland  
 Frances McMahan nee Reed, b.1811, Ireland  
 Augusta McMahan, b.1834, Kent  
 Thomas McMahan, b.1836, Kent  
 Arthur McMahan, b.1838, Kent

From the 1841 UK Census and his military records, Thomas McMahan was a soldier in the 21<sup>st</sup> Regiment of Foot. He married Frances Reed in 1834. He died a Chelsea pensioner in 1843. She appears to have remarried to a James Clarke in 1848 who was also a Chelsea Hospital resident.

As of 8-Sep-2017 the status of research into the maternal ancestors is:

(1) Farmer

*Elizabeth Farmer:* Two Elizabeth Farmer/Farmar born the same year, one in Scarragh. Needs further investigation, need establish parents, but are on the edge of surviving BDMs, so unlikely to go further.

(2) Willis

*Susanna Willis:* Possibly related to William Willis ex 22<sup>nd</sup> Foot who arrives in Kilshannig c.1834. Death certificate gives birth c.1814. Some suspects need to be checked against Army records in the National Archives, e.g. William, son of William (late of 22<sup>nd</sup> Regt) and Catherine Willis of Scarragh, was baptised 21-Mar-1834 in Kilshannig, but William(snr) cannot be found in 22<sup>nd</sup> Regt, although a William Willis retired to Fermoy from the 20<sup>th</sup> Regt. Similarly for John Tuttle (22<sup>nd</sup> Regt) who married Bridget Brien on 15-Aug-1837.

(3) McMahan

*Thomas McMahan:* Died in Greenwich 1842/3. Service record gives birth as 1802, Kilmore, Co Armagh. No birth record on the major sites. McMahans in Kilmore per Griffiths Valuation c.1850.

## (4) Reed

*Francis Reed:* Francis Reed born c.1811 per 1841 Census in England. Second Marriage gives Felix Reed (Reid), soldier, as father.

*Felix Reed:* Born c.1758 Drumall, Co Antrim, Attestation 1777, 8th Battery Royal Artillery, Married 1793 to Ann Cropley, Greenwich (possibly English), son Felix born 1801, Admitted to Pension 1812, Buried 1833 in Ballinncollig Military Cemetery, Co. Cork.

*Felix Reed:* Born 1801 to Felix Reed & Ann Cropley, enlisted in Cork in 1820. **Need to verify musters around 1811 to find where he was in 1811.**

The following images are needed:

- (1) Mallow/Kilshannig Parish Registers
- (2) Elizabeth Farmar Bapt. 23/4/1758 Scarragh
- (3) Elizabeth Farmar Bapt. 12/5/1758 Knockasweeny
- (4) Willis family Bapt. Around 1830 – 1840, especially William Willis annotated as received into the church in 1834 but Bapt. 1800

Felix Reed may be the person referred to by [66]. **This needs to be explored.** And his wife, Ann Reed ne Cropley, wife of Felix Reed, might be as per the General Register Office, Northern Ireland (GRONI) entry:

First name(s): Ann  
 Last name: Reed  
 Age at death: 90  
 Birth year: 1775  
 Registered year: 1865  
 Registered quarter/year: 1865  
 Registration district: Omagh  
 Volume: 2, Page: 263  
 County: Tyrone, Country: Ireland

**This also needs to be explored.**

Regarding the maternal extended family, almost nothing is known yet. There appear to have been two maternal uncles Thomas and Arthur, and a maternal aunt Augusta. **These need to be explored.**

UK GRO could not find certificates for:

- (1) Birth: ARTHUR MCMAHON born 1838 in WOOLWICH KENT, Regimental Birth Indices Vol.658 p.106
- (2) Birth: ROBERT MCMAHON born 1843 in WOOLWICH KENT
- (3) Birth: FRANCES MCMAHON born 1846 in LIVERPOOL LANCASHIRE

These are early events in English civil registration. There was uncertainty about whether a civil registration replaced church baptism, and registration was not made compulsory until 1871. Entry (3) is unlikely to relate but **needs to be checked.** For entries (1) and (2) their births and baptisms are known and they appear in the 1841 Census (see genealogy section) but **need to be confirmed with evidence** (certificates).

#### 4.5.Percy Ludgate's distant relations

On 4-Jul-2017, after referral by Dr.Ronald Cox, Brian Coghlan had an interesting discussion with a Norman Victor Ludgate BAI 1977 (Engineering, Trinity College Dublin), who was computer systems manager at Dublin City University c.1990.

Norman said he knew all about Percy Ludgate, that Prof. Byrne had a long discussion with him in 1973, during which he mentioned to Prof. Byrne that the only Ludgate in the Dublin telephone directory who wasn't directly related was a Violet Ludgate (i.e. Percy Ludgate's niece). So Prof. Byrne would have known about Violet and may well have talked to her before she died in 1987; his nephew (his executor) has searched his private papers but not discovered any further Ludgate-related material.

Apparently Norman's parents were from Fairview (not far from Drumcondra) and the *Ludgates Jewellers* in Upper Drumcondra Avenue (106 Drumcondra Road Upper, around the corner from Dargle Road) was owned by his uncle Ronald. Norman intends to circulate his relatives in the hope of finding more out about Ludgate's family & relatives, but is sanguine.

See further down for the wider Ludgate tree.

## 5. Probate and Wills

Of his family, only Percy Ludgate and Violet Ludgate appear to have left Wills and have probate records. Frederick appears to have died intestate. For Alice, automatic inheritance by close relatives did not apply in Ireland before the latter half of the 20<sup>th</sup> Century, so she probably didn't inherit the house they lived in, in fact they may not have owned it, and furthermore Alice and Violet could have been living with Mary, Alfred and Percy after Frederick's death, effectively homeless. Percy left his estate to his mother Mary (who was aged 82), or if she predeceased him then to his niece Violet, and made Alfred his executor. Mary then appears to have died intestate, so Alfred probably didn't inherit anything from her. Mary had senile dementia, and her only other surviving child, Augusta, was resident in an asylum in England, so her assets may have been under the control of Alfred. And then Alfred appears to have died intestate. On the other hand Violet died with significant assets, so control of Mary's assets may have passed to Violet rather than Alfred.

Will and probate records, including a schedule of assets, have been found for Percy Ludgate and Violet Ludgate. The searches need to continue for the wills and probate for Michael Edward Ludgate, Mary Ann Ludgate and Alfred Ernest Ludgate, (which may like Mary Ludgate's death be misspelt when registered), although it is probable that they died intestate. Searches need to be conducted for the wills and probate for Alexander J. McNeight and Dorothy McNeight (and their beneficiaries) as they inherited from Violet Ludgate. The only Alexander McNeight identified thus far was in Northern Ireland, so this may involve UK probate.

### 5.1. Percy Ludgate's will and probate

In Percy Ludgate's handwritten will of 26-Jun-1917, signed by him, appoints his brother Alfred as executor with £50 in lieu, and leaves the residue of his estate to his mother if she survived him (which she did), or otherwise to his niece Violet. Alfred then administered probate, declaring assets that include War Loans and War Savings with interest, bonds in the UK, Post Office and bank accounts plus cash, but just an estimated £10 of personal effects, and no real property. The debts included medical expenses for a local Drumcondra pharmacy and doctor, and to another doctor in

Merrion Square, presumably a specialist. Also included is rent of £5.18s.8d to Miss Lennon, 78 Queen St, which for the time and place would probably represent rental for at least a month. There is no mention of the Ludgate grave, but there are funeral expenses to plus cemetery fees. After estate duty including interest was paid, the residue was £812.12s.10d. Probate was proven on 23-Jan-1923.

Assets	Nominal Value	Value at Death	Subtotal 2	Balance
War Loan 3.5%	£100. 0s. 0d	£95. 5s. 0d		
War Loan 5.0%	£71. 1s. 0d	£71. 9s.10d		
War Savings	£387.10s. 0d	£387.10s. 0d		
Mersey Docks & Harbour Board 4% Bond (1924)	£200. 0s. 0d	£192. 0s. 0d		
War Savings Interest		£27. 1s. 8d		
War Loan (5%) Interest (2.0%)		£0.10s. 6d		
War Loan (32%) Interest (2.0%)		£1.15s. 0d		
Cash in House		£9. 0s. 0d		
Cash at the Bankers		£90. 3s. 8d		
Household goods, etc, unsold, estimated value	£10. 0s. 0d	£10. 0s. 0d	£884.15s. 8d	
Post Office Savings Bank A/C		£0.11s. 8d	£0.11s. 8d	£885. 7s. 4d
Debts	Nominal Value	Value at Death	Subtotal 2	Balance
Dr.Codd, Drumcondra Rd, medical fees		£7. 7s. 0d		
Dr.Cox, Merrion Sq, medical fees		£2. 2s. 0d		
A.H.Cliphart, 20 Drumcondra Rd, medicines		£4. 1s. 4d		
Loverett & Frye, Drumcondra Rd, groceries		£13. 0s. 0d		
Mrs.Lawler, 28 Drumcondra Rd, meat		£4. 3s. 6d		
Miss Lennon, 78 Queen St, rent		£5.18s. 8d		
Sundries		£4. 0s. 0d	£40.12s. 6d	
B.Farrell, 66 Marlborough St, funeral expenses		£11.17s. 6d		
Cemetery fees		£3. 5s. 0d	£15. 2s. 6d	£55.15s. 0d
Probate	Nominal Value	Value at Death	Residue	Balance
Assets		£885. 7s. 4d		
Debts		£55.15s. 0d	£829.12s. 4d	
Estate duty		£16.17s. 9d		
Interest on estate duty		£0. 1s. 9d	£16.19s. 6d	£812.12s.10d

Farrells Undertakers no longer exist. Robert Farrell traded as a coachbuilder from 63 Marlborough Street from at least c.1842 and by 1862 Bridget Farrell (presumably his daughter) had moved into no.64 and by c.1870 she traded from 66 Marlborough St and continued to do so at least to 1895. By 1939 Peter Farrell traded as a coachbuilder at No 66. Their archives may survive. **This may warrant investigation.**

## 5.2.Violet Ludgate's will and probate

Violet Ludgate's will was signed by her on 1-Oct-1985, only two years before she died, and with a quite shaky hand, while living at the Garden Flat, 39 Wellington Rd, Dublin. She donated her body to Trinity College Dublin for medical research, subsequently to be interred at Caragh (Cruagh) graveyard, and appointed Alexander J.McNeight and Dorothy McNeight of 14 Whitebeam Ave, Clonskeagh, as executors, bequeathing the residue of her estate to them. In the executor's oath the McNeights

declared they were a retired joinery manager and housewife respectively, and that Violet was a retired Alomer's clerk in the Eye & Ear Hospital, and that she had died (aged 80) at St. Vincent's Hospital in Elmpark. Note that she was actually aged 83, and also funeral expenses included a notice in the Irish Times and Evening Herald.

The McNeights administered probate, declaring assets that include Post Office, building society and bank accounts plus cash, but nil personal effects and no real property. The debts only included groceries and electricity. There is no mention of the Ludgate grave, but there are funeral expenses. After estate duty was paid, the residue was €18557.69. Probate was proven on 11-Sep-1987.

Assets	Nominal Value	Value at Death	Subtotal 2	Balance
Cash in House		€95.73		
Cash at Allied Irish Bank		€1517.12		
Post Office savings (i)	€1296.60			
Post Office savings (ii)	€1133.17	€2429.77		
Irish Permanent Building Society	€10659.90			
First National Building Society	€5282.84	€15942.74	€19985.36	
Household goods, etc, unsold, estimated value	€0.00	€0.00	€0.00	€19985.36
Debts	Nominal Value	Value at Death	Subtotal 2	Balance
James Redmond & Sons, groceries		€267.07		
Electricity Supply Board		€150.60	€417.67	
Carnegie & Co.Ltd, funeral expenses		€974.00	€974.00	€1391.67
Probate	Nominal Value	Value at Death	Residue	Balance
Assets		€19985.36		
Debts		€1391.67	€18593.69	
Estate duty		€36.00	€36.00	€18557.69

Searches need to be conducted for the wills and probate for Alexander J. McNeight and Dorothy McNeight and their beneficiaries. North Dublin parish registers for Q3 of 1942 (Vol.2 p.311) indicate Alexander John McNeight married Dorothy Emma Chalmers. An Alexander McNeight was born on 12-Mar-1903 to William John McNeight and Esther Trimble, who lived in Ballnamagna, Banbridge, Northern Ireland. A Dorothy Emma Chalmers was born on 7-Apr-1906 in Canal House, Tullamore, to Robert Chalmers (harbour master) and Emma Myers. By the 1911 Census the Chalmers family was living at 57 Whitworth Road, Drumcondra. Violet was also born in Tullamore, and was by the 1911 Census living at 17 Carlingford Terrace (the road behind Dargle Rd). Perhaps the Tullamore and Drumcondra links are pertinent.

## 6. Percy Ludgate's grave

One of the many unknown aspects of Percy Ludgate's life was where he was buried, and related aspects such as probate and wills. These need to be explored.

## 6.1. St.George's Parish

Access to any related archbishopry records would potentially give access to school records and determine how to get into graveyards, and help locate graves. The Archbishop passed the request to the Librarian/Archivist of the Church of Ireland RCB Library, who explained as follows:

Dear Professor Coghlan,  
 The St George's collection of parish registers and other materials is here. Please see attached handlist. You are most welcome to visit to explore this resource and I hope that it will help to answer your queries. We are open from 9.30-1.00 and 2.00-5.00 Monday to Friday.  
 Kind regards,  
 Susan Hood  
 Dr Susan Hood, Librarian & Archivist,  
 Church of Ireland RCB Library,  
 Braemor Park, Churchtown, Dublin 14.  
 +353-1-4923979, <http://www.library.ireland.anglican.org/>

Notwithstanding the statement by Percy Ludgate's niece that he attended St.George's Church in Temple Street, Dublin, exhaustive examination of the records (church magazine, accounts, vestry minutes, etc) showed no sign of involvement of the Ludgate family in the parish, and no evidence in burial registers of their burials in the St.George's graveyard (no Ludgate was buried there from 1921-2000). They were also absent from other Church of Ireland graveyards in Dublin: St.Thomas', St.Auden's, St.Mary's, St.Mark's, St.Mobhi's Glasnevin, and Clontarf. They were also absent from online registers for the municipal graveyards at Dean's Grange, Cruagh (where Violet Ludgate is buried), Balgriffin (there are unrelated Ludgates buried there), and Glasnevin. A non-negligible possibility arose that Michael Ludgate and his family were buried in Balbriggan, or with their ancestors in Kilshannig, Winchester or Sussex, but this proved not to be so, see below.

St.George's in Balbriggan has yet to be checked specifically for any information relating to Michael Edward Ludgate.

## 6.2. Where was Percy Ludgate buried?

The 1901 Census says Percy's father Michael was 'Episcopalian Church of Ireland' so maybe they all were so inclined, suggesting they may have also attended the Unitarian Church on St.Stephen's Green, Dublin, and been buried in Mount Jerome Cemetery. In fact the latter proved to be the case. From the Mount Jerome records:

Ludgate Grave, A29-412-16113 (H/S?):  
 Frederick Ludgate d.2-Dec-1921  
 Percy Edwin Ludgate d.16-Oct-1922  
 Alice Emily Ludgate d.22-Oct-1922  
 Mary Ann Ludgate d.22-Aug-1936  
 Alfred Ernest Ludgate d.3-Sep-1953  
 Grave purchased in perpetuity by Percy Ludgate on 6-Dec-1921, then transferred on 11-Apr-1923 to Alfred Ludgate, who appears to remain the current owner.

In fact their burial in Mount Jerome is stated in death notices. Scanned images that were previously examined are blurred and appeared not to mention burial, but an inspection of microfilm of the original newspaper showed the text in Figures 46-47.

Percy appears to have purchased the grave for Frederick's interment. Alfred appears to have claimed the grave as Percy's executor. He may also have been by then responsible for the assets of his mother, who was aged 82. Percy didn't bequeath the grave, but Alfred claimed it. One question is how Alfred had the right to do that.

The grave is quite hard to find. It is in section 412 (Fig.48), reached from the church via Hawthorn Walk → Neville's Walk → North East Walk → Drummond Walk. On the latter, section 412 is on the right past between the 2<sup>nd</sup> and 3<sup>rd</sup> blue-metal paths. The grave of the Fox family (e.g. Charles Fox & Ernest Patrick Fox) is first in a row about three-quarters along section 412; the Ludgate grave is the 5<sup>th</sup> grave in the next row. 2<sup>nd</sup> in this row is the grave of the Murtagh family (Albert Murtagh & Bridget Murtagh). 7<sup>th</sup> in this row is the grave of the Bishop family (Louisa Bishop & Willie Bishop & Henry Bishop). See Figures 49-50.

One question was that if Alfred Ludgate died intestate, how did the person(s) who buried him know of the grave, most importantly were they beneficiaries of an unknown will? The Mount Jerome burial records say "William McManus of 3 Upper St.Columba's Road, Glasnevin, Friend", registered his burial. In the 1901 Census William McManus lived with his parents at St.John's Place, Larne, Antrim, while by the 1911 Census he was at 31 Dargle Rd with his wife Mary Agnes and indicated they married in 1910 and that he was born in Antrim. The 1911, 1912, 1913 and 1915 electoral registers state he remained at 31 Dargle Rd, and Thoms Directory lists him as still there in 1922 and 1929-38 (thereafter G.M.McDonagh). But Thoms Directory also lists William McManus at 3 Upper St.Columba's Road, Glasnevin, from 1936-40 and still there in 1952. It would appear he moved there in 1936 (a Mrs.Mary Jeffares was there in 1934-35), or maybe these two people were father and son, e.g. it is possible that William McManus(snr) married Mary in 1910, had a son William(jnr) after 1911, who was married and resident in Glasnevin by 1936, and still there in 1953 when he looked after Alfred's burial. He at least would have known about the Ludgate family grave, is likely to have attended all their previous burials, although Violet Ludgate was aged 20 when her mother Alice and uncle Percy died (and registered his death), aged 33 when Mary Ludgate died, and aged 50 when Alfred died, so would also have known of the grave where her Mother, grandmother and uncles were buried. Thoms Directory for Dargle Rd from 1937-1953, and also for Upper St.Columba's Road in 1935-1953 may clarify this, and hence need to be explored. The above at least potentially clears up mysteries about Alfred's burial.

### 6.3. Who owns Percy Ludgate's grave?

Until Sep-2019 the grave was unmarked (which is why it couldn't be found in any index) and in a poor state, see Fig.50. Percy Ludgate's name is honoured by the School of Computer Science and Statistics of Trinity College Dublin by an undergraduate prize each year, and his grave likewise should be honoured. This is in addition to his importance in the history of the subject. But the last owner was his brother Alfred, who died without probate. Mount Jerome stated the ownership remains with the current owner Alfred Ludgate, so to erect a gravestone Trinity

College would need the permission of an owner who is dead (in that very grave). It was unclear what happens in this situation.

In English Law ‘*Where a person dies intestate, or dies testate but leaving no executor surviving him, his real and personal estate, until administration is granted in respect thereof, shall vest in the President of the High Court who, for this purpose, shall be a corporation sole.*’ The equivalent Irish succession law needed to be examined. The crux is whether the estate was too small to require the formal process. This depends on the threshold for administration in 1936, which needed to be ascertained, and also whether an Administrator was appointed. The National Archives of Ireland suggested that any actions by an administrator would yield a probate entry, but there is none. When Alfred died in 1953, Augusta and Violet were the only survivors. The grave was then full, so Augusta and Violet were buried elsewhere. There is no probate record for Augusta, and Violet’s Will does not mention the grave (she left her body to Trinity College Dublin for medical research, to be interred in Cruagh Cemetery afterwards, see Fig.53). However, if she did inherit the grave then the wills and probate for her inheritors Alexander J. McNeight and Dorothy McNeight and their beneficiaries might yield guidance. The only Alexander McNeight identified thus far was in Northern Ireland, so this might involve UK probate.

It is said that in the absence of any estate passing/left at death, then the State’s rights of *bona vacantia* arise, so in all likelihood Alfred’s estate, including grave, would revert to the State, which would lodge any proceeds to the intestate estate funds deposit account. The Attorney General would then authorise the Chief State Solicitor’s Office to issue letters of administration and administer the estate. The Probate Office was asked if they have any record of the State’s rights being invoked or of the Attorney General authorising the Chief State Solicitor’s Office to issue letters of administration, so that solicitors could begin the process to formally establish ownership. However this led nowhere.

In any event, the ultimate power regarding graves possibly remains vested in the authority who appointed the land to be a graveyard. ‘Ownership’ of a cemetery plot in law falls well short of that found in the case of other portions of real estate, it is more like a long term lease (perpetuity) to fill and mark the grave. An approach by Trinity College Dublin as a public body to the relevant current authority was possibly feasible given the objective is well intended and of national importance.

That authority is likely to be the company that holds the title to the cemetery. The General Cemetery Company of Dublin established its cemetery on the lands and house of Mount Jerome in Harold’s Cross from the Earl of Meath on the 23-Jan-1836. With declining burial numbers and revenue in the 1970s, the cemetery deteriorated. In 1984 it entered voluntary liquidation. By the late 1990s it had fallen into a serious state of neglect. New private owners, Orlette Ltd, took over in 1998 and opened a crematorium in 2000, after which revenues recovered and enabled good maintenance. A search in the Land Registry & Property Registration Authority showed the land occupied by the cemetery is not a registered title but the older Registry of Deeds Title. This is likely to be a Fee Simple or Absolute title. The underlying title held by the company was therefore likely to be superior to the “burial rights” held by a Ludgate, i.e. it was not the ground occupied by the grave which Percy Ludgate purchased but the “burial rights”. The cemetery lists illustrious internees [63], so

would probably welcome a memorial, as long as it followed the cemetery's rules. Orlette Ltd has its registered office at P.K.F. O'Connor, Leddy & Holmes, Century House, Harold's Cross Rd, Dublin D6W P993, their accounts are up to date, and Alan and Margaret Massey seemed to be the active directors.

However, after the Dec-2018 discovery of descendants of Mary Ann Ludgate and her son Frederick Ludgate and his wife Alice Emily Ludgate (all buried in the grave), in discussion with Alan Massey of Mount Jerome Cemetery it transpired that Mount Jerome is one of the last places where graves are owned and inherited in perpetuity, not as a lease on the ground, or a lease on the burial rights, but the grave ground itself, and that surviving descendants have the right to erect a gravestone in one of two simple ways:

- (1) As Alfred died intestate, it may be claimed by the surviving descendants filling out the form at: <https://www.mountjerome.ie/?content=transfer-of-grave-ownership>  
This allows a permanent gravestone to be erected, but includes a legal indemnity clause to reimburse Mount Jerome the legal and other costs of any challenge.
- (2) The surviving descendants could ask to be allowed to erect a "Temporary Marker" on the grave, typically a horizontal stone/marble slab laid flat on the grave, quickly removable at no cost in the event of a challenge. The ownership would remain unchanged and there would be no indemnity.

Mr.Massey suggested (2) as the best approach. Violet's grandchildren represent the sole surviving descendant family, so in Jul-2019 they requested the placement of a temporary marker on the Ludgate grave, and by Sep-2018 this was achieved, see Figs.52 and 53.

## 7. Percy Ludgate's academic contacts

In Percy Ludgate's paper of Apr-1909 he thanked Charles Vernon Boys for his encouragement. C.V.Boys also published a review of Percy Ludgate's 1909 paper in Nature. Clearly he was an interested academic contact. Ludgate's paper, on the other hand, was conveyed to the publishers (RDS) by Prof.Conway.

### 7.1.Professor Sir Charles Vernon Boys FRS

C.V.Boys published a review of Percy Ludgate's 1909 paper in Nature, where he was thanked for his encouragement. Clearly he was an interested 3<sup>rd</sup> party.

Exploration of Boys' archives is predicated on Ludgate's statements in his 1909 paper "I've prepared many drawings" and his 1914 paper "Complete descriptive drawings of the machine exist, as well as a description in manuscript, but I have not been able to take any steps to have the machine constructed". For a machine of this complexity the 'complete drawings' would most probably need 50 or more drawings of his 1909 engine, and also more for his 1914 engine, numerous enough to prompt the thought 'what should we do with this'. It seems likely the family were proud of Percy and unlikely to have discarded his drawings, and much more likely given his contact with Prof.Boys or Prof.Conway, and also his church, whether by instruction or otherwise, to have passed relevant material on to those known interested parties.

Charles Vernon Boys FRS (b.15-Mar-1855, d.30-Mar-1944) [72, 73] was the son of Rev.Charles Boys (b.1809, d.Jun-1898, Anglican vicar of Wing, Rutland) and

Caroline Goodrich Dobbie (b.1816, d.1876). Note that his father's middle name is often incorrectly stated as Parkson (*ref:* grandson John Vernon Boys). His paternal grandparents were Charles Worsley Boys (b.1779, d.1809) and Mary Vulliamy (b.1781, d.1865), and maternal grandparents Captain William Hugh Dobbie (b.1771, d.1830) and Agatha Shedden Goodrich (b.1784, d.1841). While a student he invented the mechanical *Integraph* for plotting the integral of a function. He clearly did early work in 1876, 1881 and 1883 as [80] mentions Boys' earlier work from 1876 and his papers published in 1881 and 1883: "Boys' integraph was invented during a sleepless night, and during the following days carried out as a working model, which gives highly satisfactory results. It is ingenious in its simplicity...".

He worked as a physicist at the Royal School of Mines (1889-97, now part of Imperial College London), where he invented the fused quartz fibre torsion balance, which allowed him to measure extremely small forces using super-fine fibres. He was known above all for his careful and innovative experimental work. Imperial College highlighted Boys in a recent issue of their magazine [93]. Imperial College records are held in the UK National Archives.

Like many inventors, Sir Charles relied on a healthy dose of serendipity and a little eccentricity.

One of the worst teachers who has ever turned his back upon a restive audience ... galloped through an hour of talk and bolted back to the apparatus in his private room. –H.G. Wells

Later he became a Metropolitan Gas Referee (1897-1939). He was President of the Physical Society (1916-17), and President of the Rontgen Society (1906-07). He was quite involved in the Royal Society, on the War Committee, acting as a referee for Society journals, and in their Letter Books (NLB, letters to and from the Society's secretary). He was knighted in 1935. **The Royal Society of Edinburgh records also need to be explored.** His obituary notice in the Proceedings of the Physical Society in Nov-1944 stated that his papers "were found well-preserved and in meticulous order at his death". These papers are now in the care of his grandson John Vernon Boys, who has given very generously of his time and effort in assistance.

There is limited material related to C.V.Boys in the UK National Archives, the Royal Society, the Imperial College Archives, the Science Museum Library and Archives, and Cambridge University Library Department of Manuscripts and University Archives [74]. Although none of this has been physically inspected, it appears unlikely to be relevant to Percy Ludgate.

He married Marion Amelia Pollock (b.1866, d.1920) in 1892, and had a son Geoffrey Vernon Boys (b.1893, d.Mar-1945) and a daughter Margaret Angela Boys (b.1897, d.1937) (m.Malcolm Mitchell-Carruthers), but they divorced in 1910 [94] and she remarried to the Cambridge mathematician Andrew Forsyth. The Royal Society obituary (by Lord Raleigh) [75] implies Boys' divorce was fairly good natured on both sides, whereas the reality may have been different [76]:

In 1910 the ostracism Edwardian Cambridge meted out to Forsyth for allowing the estranged and badly mistreated wife of C.V.Boys to move in with him made Forsyth decide to resign not only his professorship, which he surely would have had to forfeit, but also his Trinity fellowship, which was unassailably his for life. (He became a Professor at Imperial College, and married the former Mrs.Boys.)

Geoffrey Boys married Helen Forence Mary Gosling (daug.of Frank Gosling) in 1933, and they had a son John Vernon Boys, who has been very helpful.

Boys did quite a bit of work on various analogue calculating instruments [78, 79, 80, 81, 82, 83, 84, 85, 86], and was said to be a prolific reviewer and inventor, for example, three weeks after his 1909 Nature review of Ludgate's paper he published in Nature on his design for a new navigational instrument [87] (copies of these papers are in the associated folder in this catalog). The Royal Society obituary makes clear Boys' pleasure in building his own instruments and his abilities as a machinist, but doesn't say anything about his abiding interest in calculating machines, except maybe via his role as examiner in all the major related patent applications. His comments on the details of calculating machines crop up regularly, e.g. in Whipple's article in the Napier Tercentenary Handbook, and his work on calculating machines is mentioned in [78], and [86] is often referenced regarding calculating with addition as basic operator.

It is not clear whether or not he volunteered to review the 1909 Ludgate article, but he was evidently very enthusiastic about it. However his review gives no indication of any knowledge of Ludgate or his machine beyond what is in the paper, and whether he was a mentor or just a reviewer is also unknown. [77] needs to be explored, as it is in the right timeframe in relation to Ludgate's 1909 paper.

It is now clear from the records of the RDS Publications Committee that after Conway (a committee member) reviewed Ludgate's 1909 paper he suggested Boys conduct a second review. Boys was evidently very enthusiastic about it. However his review gives no indication of any knowledge of Ludgate or his machine beyond what is in the paper, or what input Boys made apart from suggesting Ludgate "*emphasize the points which he considers important*" (whether "*he*" referred to Boys or Ludgate is not clear), or whether Conway was a mentor or just a reviewer. [77] needs to be explored, as it is in the right timeframe in relation to Ludgate's 1909 paper.

Enquiries continue to need to be made regarding Boys' archives and whether they include relevant material.

## 7.2. Professor Arthur William Conway FRS

As with C.V.Boys, any exploration of Conway's archives is predicated on Ludgate's statements in his 1909 paper and his 1914 paper and whether relevant material may have been passed on. The front page of Ludgate's 1st paper in the Sci.Proc.RDS of 1909, says 'Communicated by Professor A.W.Conway', which normally means that Conway was what we would now call the referee on the paper, so it is doubtful that he would have had actual plans, but this avenue nevertheless needs to be explored.

Arthur William Conway FRS [90, 91] was born on 2-Oct-1875 in Wexford to Myles Conway and Teresa Conway ne Harris. His father died in 1877 and his mother later remarried. He had two siblings, Arthur and Bridie (who became a very gifted musician). He married Agnes Christina Bingham (b.1882, d.1929) on 19-Aug-1903, and they had three daughters (Teresa Mary Conway b.1905, Verna Marguerite Conway, and Orlaith Conway) and one son (Morgan Felix Conway b.1910). He was Professor of Mathematical Physics at UCD for 1901-1940 (40 years), wrote a very early book on relativity [95], became an FRS in 1915, the President of Royal Irish Academy 1937-1940, the President of University College Dublin 1940-1947 (the Conway Institute is named in his honour), President of the Royal Dublin Society

1941-44, and was involved by DeValera in creating the Dublin Institute for Advanced Studies (DIAS), and was first Chairman of DIAS 1940-50 when Schrodinger was there and published his famous little book “*What is Life?*” in 1944. A.J.McConnell (who with Conway edited Hamilton’s writings) edited some of Conway's writings in 1947 to be published by DIAS, and there was a detailed Royal Irish Academy obituary on 1-Nov-1951. He died on 11-Jul-1950, and probate stated:

CONWAY ARTHUR W. (1533) 27 November Probate of the Will of Arthur Wulliam Conway late of Colamore Lodge Coliemore Road Dalkey Co. Dublin President U.C.D. (retired) who died 12 July 1950 granted at Dublin to Very Reverend William Shiggins Catholic Clergyman Effects £13537: 5: 7.

Given Conway's prominence the question is whether his descendents know whether his papers survived and if so whether they referred to Ludgate's plans.

Charles Mollin published a comprehensive review of Conway and his works [92].

## 8. Research Notes

The current trend amongst archives is to image, index and the store the originals in some climate controlled, fire-proof mountain with imaging paid for by commercial genealogy companies. In the UK all the old ledgers have been removed and replaced with online access.

### 8.1. UK Research Notes

The current trend amongst archives is to image, index and the store the originals in some climate controlled, fire-proof mountain with imaging paid for by commercial genealogy companies. In the UK all the old ledgers have been removed and replaced with online access.

The UK National Archives' role is to hold documents created by the government departments such as the War Office, Ministry of Heath, Foreign Office, etc. It also acts as the standards body for archives and its search engine, *Discovery*, holds the catalogue for almost all registered archives in England and Wales. These hold a mixture of records generated by the various national and local government departments, as well as personal and other records. The Discovery Catalogue is at: <http://discovery.nationalarchives.gov.uk/>

UK parliamentary papers are held in their archives at:

<http://www.parliament.uk/business/publications/parliamentary-archives/>

This is mostly acts of parliament, committee reports and similar. Day to day business is reported in Hansard.

Both have online catalogues but the index is limited, information may be buried in committee reports act. The National Archives also includes a search of the county archives and other. Archives are released usually after no more than 70 years, mostly earlier, unless there is some paramount security issues or they contain personal details not in the public domain (for 100 years).

A typical search, for example, for "Boys", returns thousands of documents (relating mostly to the UK Ministry of Education and schools). A search for "Charles Vernon Boys" returns only the summary of his divorce, although there are a number of his papers in other archives. Percy Ludgate was co-opted on to a committee that advised the War Office in WW1. To find if anything was deposited would need the formal name of the committee and, if possible, the chairman. This is about all that would be in the index entry. There are no hits for Percy. There were several committees advising the Ministry of Munitions, one of which was to advise on technologies and instruments and this merits a closer look.

For post-1911 UK census, there is a movement to get the 1926 census released as this is the first census taken in the "new" republic. In 2012 the cabinet approved the digitisation and committed to enabling legislation by 2016. The returns may be with the Central Statistics Office along with later Census returns. They probably have not yet been indexed.

The UK probate office is at:

<https://probatesearch.service.gov.uk/Calendar#calendar>

The name and date can be entered then the document ordered (£10).

UK BMD certificates are available online from the UK General Records Office (UK GRO). As many of their certificates will still be covered by data protection it will cost £10 a certificate unless GRO have arrangements for academic research. Indian certificates are held by the UK National Archives but may be ordered through the UK GRO as army records. Overseas births, etc, including military, are held in a separate register by the Registrar General. The Indian Births would most likely be noted in the Regimental or Company records and so may be in Military Archives.

The Society of Genealogists has genealogical records plus members' lists and similar publications in its Library Catalogue at:

<http://s10312uk.eos-intl.eu/S10312UK/OPAC/Index.aspx>

As well as genealogical records it has members lists and similar publications.

The commercial facility 'Ancestry' at <http://www.ancestry.co.uk/> has a great deal of UK genealogy information. MyHeritage at <https://www.myheritage.com/> is not as slick as but does address several additional databases.

When searching image archives (e.g. London Gazette), the search engines invoke OCR scans of images of the originals, and look for a series of characters. Often the OCR does not do any quality checks, so can come confused, e.g. a search for "Percy Ludgate" would not find "Percy E" or "Perhgf Ludgate", but can find "Ludgate Hill" or "Ludgate Circus". Very rarely, such search engines allow searches to match logical expressions, and even options to exclude some terms. A very common flaw is that they are case sensitive and/or strict. For example, the LG archive search is strict, so "Percy E. Ludgate" will not find "Ludgate, Percy E." or indeed any other variations.

## 8.2. Irish Research Notes

The main Dublin BMD office in Lombard Street does not support research, which is done at its research annex in Werburgh Street. The idea that it is 'free for academics' is

a myth. It costs €2 per index, or €20 for carte blanche searching, and €4 per research certificate.

If visiting the Dublin BMD research annex it is suggested to photograph everything with a 10Mpixel or better camera, even if the images are on microfilm. The free *Photo* program on Windows10 can be used to later clean up the image. The best policy is not to be diverted, to adhere to the 80:20 rule and save further investigations for a second visit.

Ireland in particular has been keen to increase access to encourage tourism (and reduce the cost of archiving), and has followed the current trend to image, index and store the originals elsewhere. Many of the original registers have been handed over to the National Archives of Ireland for safekeeping in a controlled environment, and enquiries are directed to the 'familysearch.org' microfilms (or images); other records are thought to be kept in Co. Roscommon.

But before going to the Dublin BMD research annex it is wise to examine the civil records plus images of civil registrations released online by the Irish Government at <http://irishgenealogy.ie/>. These records currently cover counties Cork, Kerry and Dublin. They show if a free image is available or give you a link to order one online.

The commercial facility <http://www.rootsireland.ie/> was a result of the Irish Family History Foundation initiative; it does not include images, and much of what is on 'rootsireland.ie' is available free and with images on 'irishgenealogy.ie'. In addition <http://findmypast.ie/> has a large collection of non-BMD records, and Genuki Ireland at <http://www.genuki.org.uk/big/irl/> has church records and civil registrations. A very good source for Irish BMD indexes is Familysearch at <https://familysearch.org/>, which microfilmed the ledgers and indexed them on line. For searches in Cork, the IGRS has transcript copies of many Cork parish register collections, see <http://www.irishancestors.ie/>. Overall, these sites cover most of what is available.

The Dublin Probate Office is in Phoenix House, Smithfield, Dublin, telephone +353-1-8886174/6728.

### 8.3. Public appeal for information

A joint public call for information about Percy Ludgate was launched at the West Cork History Festival in Skibbereen on 10-Aug-2019 by Dr. Brian Coghlan of Trinity College Dublin [coghlan@cs.tcd.ie](mailto:coghlan@cs.tcd.ie) and Adrienne Harrington of the Ludgate Hub [adrienne@ludgate.ie](mailto:adrienne@ludgate.ie) to gather the following:

- about relatives
- about acquaintances
- related documents
- related photos
- related memories
- Ludgate's drawings

The smallest snippet can often be a key.

Thus far the call for information has been publicised in the following newspapers:

- Southern Star, page 11, 27-Jul-2019

- Irish Examiner, page 2, 6-Aug-2019

It may also be useful to contact Findmypast Ireland, as it is the sort of thing they like to feature in their publications and they have agreements to publish certificates, etc..

#### **8.4. Investigating Team**

Dr.Brian Coghlan, Prof.Brian Randell, Paul Hockie, Trish Gonzalez, David McQuillan, Reddy O'Regan

DRAFT

### 9. Table of Percy Ludgate's close relations, in-laws, etc

Percy had uncles, aunts, cousins, in-laws, mostly in Co.Cork:

Previous generation Parents/In-Laws/Uncles/Aunts	Percy's generation		Next generation Neices/Nephews/Others
	Siblings/In-Laws/Cousins	Siblings of In-Laws	
Thomas Ludgate			
Michael Edward Ludgate Mary Ludgate nee McMahon	Thomas Edward Ludgate Bridget Ludgate nee Buckley		
Maurice Buckley Ellen Buckley nee Desmond		Margaret Buckley Catherine Buckley Mary Buckley Cecilia Buckley nee Buckley John Buckley Helena Buckley Maurice Buckley Michael Buckley Denis Buckley Anna Buckley Elizabeth Buckley Emily Buckley	Daniel Buckley Cecilia Buckley
William Walshe Mary McFarland	Augusta Ludgate Frederick Ludgate Alice Ludgate nee Walshe	Mary Walshe Eleanor Walshe	Violet Ludgate
	Alfred Ernest Ludgate <b>Percy Edwin Ludgate</b>		
Mary Alice Ludgate			
Elizabeth Ludgate			
Robert Ludgate			
Richard Ludgate			
David Ludgate			
William Joseph Ludgate Mary Alice Ferris	William Henry Ludgate Charles Cecil Ludgate Isabella Rose Ludgate Robert Willis Ludgate Mary Barrett		Richard Gerald Ludgate sp:Unknown Margaret Mary Ludgate John Joseph Coleman
	Joseph Ferris Ludgate Annie Lilian Jennett Arthur William Ludgate Edward Frederick Ludgate		William George Napier Ludgate
Augusta McMahon			
Thomas McMahon			
Arthur McMahon			
Robert McMahon			

## 10. Family tree of Percy Ludgate's wider Ludgate relations

The following is an update of a wider Ludgate tree originating from Alan Perrott, with updates by Paddy Waldron, then further updates as a result of these investigations:

1. Matthew Ludgate-126532  
sp: Mary -126533
2. Elizabeth Ludgate-126537 (r. 20 Jul 1735-Kilshannig, Cork, Ireland)
2. David Ludgate-126530 (r. 31 Jan 1736/7-Kilshannig, Cork, Ireland)  
sp: Jane -126531
3. John Ludgate-126528  
sp: Elizabeth Campbell-126529
4. Robert Ludgate-126457 (d. Bef 11 Dec 1891)  
sp: Margaret Heggart-126458 (b. Abt 1808/9 m. 1 May 1832 d. 11 Dec 1891-Gortbofinna, Cork, Ireland)
5. Thomas Ludgate-126466 (r. 15 Jan 1833-Ballyclogh, Cork, Ireland d. Bef 1901)  
sp: Elizabeth Patterson-126569 (b. Abt 1831/1833-Cork, Ireland m. 18 Feb 1860 d. 26 Jan 1903-Lombardstown, Cork, Ireland)
6. Thomas Ludgate-126596 (b. 1 Dec 1866-Cork, Ireland d. Bef 25 Jan 1869)
6. Ludgate-126586 (b. 25 Oct 1867-Cork, Ireland)
6. Thomas Ludgate-126594 (b. 25 Jan 1869-Cork, Ireland)  
sp: Anne Davis-126597 (b. Abt 1869/1871-Cork, Ireland m. 8 Aug 1900)
7. Thomas Victor Ludgate-126598 (b. 16 Mar 1904-Victoria Hospital, Cork City, Ireland d. 4 Apr 1984)  
sp: Irene Anna Good-126599 (b. Abt 1912/3 m. Abt Aug 1943 d. 17 Dec 2004)
8. Ivan Ludgate-126603 (d. 17 Jun 1947)
7. Rebecca Elizabeth Ludgate-126600 (b. Abt 1904/5-Cork, Ireland)
7. John David Ludgate-126601 (b. Abt 1906/7-Cork, Ireland)
6. Isabella Charlotte Ludgate-126595 (b. 23 Sep 1870-Rathnadarrahy, Castletownroche, Cork, Ireland)  
sp: John Henry Good-126618 (b. Bef 1883 m. 27 Aug 1904)
5. Elizabeth Anne Ludgate-126468 (r. 19 Dec 1834-Ballyclogh, Cork, Ireland d. 21 Nov 1927-Garryard, Kerry, Ireland)  
sp: Thomas Bolster-126467 (r. 19 Jan 1823-Kilshannig, Cork, Ireland m. 9 Aug 1855 d. Bef 1927)
5. Robert Ludgate-126438 (b. Abt 13 Feb 1839-Cork, Ireland d. 8 Jul 1915)  
sp: Mary Annie Baily-126440 (b. Abt 1848/1861-Cork, Ireland m. 22 Feb 1877)
6. Robert Ludgate-126441 (b. 15 Jun 1878-Cork, Ireland), Kilmichael  
sp: Kathleen Winter (b.abt.1910 d.1958) Skarragh
7. UNKNOWN female 1
7. UNKNOWN female 2
7. UNKNOWN female 3
7. UNKNOWN female 4
7. UNKNOWN female 5
7. UNKNOWN female 6
7. UNKNOWN female 7
7. UNKNOWN female 8
7. Robert (Bobby) Ludgate, Ballyclough  
sp: UNKNOWN
8. Robert (Rob) Ludgate
6. Thomas Francis Ludgate-41576 (b. 26 Mar 1880-Cork, Ireland), Rathnee  
sp: Rachel Elizabeth Gardiner-41582 (b. Bef 1903 m. 26 Feb 1924 d. 6 Dec 1976)
7. Elsie Ludgate-126521 (d. Bef 2016)
7. Annabelle Ludgate-126522 (d. Bef 2016)
7. Bertie Ludgate-126523 (d. Bef 2016)
7. Dorothy Ludgate-14389 (b. Abt 4 Jun 1927-Cork, Ireland d. 8 Dec 2016-Thorpe's Nursing Home, Clarina, Limerick, Ireland)  
sp: Richard Keays Smith-10362 (b. Abt Feb 1910-Limerick, Ireland m. 17 Mar 1954 d. 5 Apr 1995)
8. Elizabeth Charlotte Smith-14395 (b. Abt Feb 1956-Cork, Ireland)  
sp: Niall J Eager-14396 (m. Jul 1987)
9. Catherine Eager-14397
9. Richard Eager-14398

- 9. Alice Eager-14399
- 9. Sharon Eager-14400
- 8. Burton Smith-10366 (b. 27 Mar 1958-Cork, Ireland)  
sp: Carole Good-17321
  - 9. Jeffrey Smith-14401 (b. 1994)
  - 9. Andrew Smith-14402 (b. 1994)
- 8. Richard Francis Smith-14403 (b. 1963)  
sp: Carolyn -103977
- 8. Rachel Dorothy Smith-14404 (b. 1965)  
sp: Henry Brennan-14405
  - 9. Stephanie Brennan-14406
  - 9. Victoria Brennan-14407
  - 9. Brennan-41577
- 8. John Smith-14408 (b. 1967)  
sp: Louise Tynan Solr.-41578
  - 9. Smith-41579 (b. Abt 2006)
  - 9. Smith-41580
  - 9. Smith-41581 (b. Abt 2010)
- 7. Thomas Ludgate-126524
- 7. John Ludgate-126525
- 7. Ruby Ludgate-126526  
sp: Arthur Perrott
- 7. Evelyn Ludgate-126527
- 5. John Ludgate-126461 (b. Abt 14 Mar 1841-Cork, Ireland)  
sp: Sara C Buck-126555 (b. Abt 1852/3-Cork, Ireland m. 22 Jun 1875)
  - 6. Margaret Ludgate-126574 (b. 21 May 1876-Cork, Ireland)
  - 6. Robert Samuel Ludgate-126556 (b. 28 Apr 1878-Cork, Ireland)  
sp: Mildred Edith Camlin-126557 (b. 5 Jan 1879-9 Vincent Street South, Dublin City, Ireland m. 7 Oct 1903)
    - 7. Victor John Ludgate-126577 (b. Abt 1904/5-Dublin City, Ireland)
    - 7. Dorothy Sarah Ludgate-126578 (b. Abt 1905/6-Dublin City, Ireland)
    - 7. Sidney William Ludgate-126579 (b. Abt 1906/7-Dublin City, Ireland)
    - 7. Veda Mildred Ludgate-126580 (b. Abt 1908/9-Dublin City, Ireland)
    - 7. Harold Bertram Ludgate-126581 (b. Abt 1910/1-Dublin City, Ireland)
    - 7. Alfred Allen Ludgate-126571 (b. 27 Jan 1913-51 Cadogan Road, Dublin, Ireland)
    - 7. Frederick Samuel Ludgate-126608 (b. Abt 1911/2)  
sp: Alice Bridget Ridgeway-126609 (b. Abt 1909/10 m. 2 Jul 1937)
  - 6. John William Ludgate-126575 (b. 15 Apr 1880-Cork, Ireland)
  - 6. Gertrude Elizabeth Ludgate-126592  
sp: UNKNOWN
    - 7. Charles James Ludgate-126593 (b. 23 Oct 1904-Summer Cove, Cork, Ireland)
  - 6. Ethel May Ludgate-126587 (b. Abt 1884/5-Cork, Ireland)  
sp: James Lewis Lawson-126589
    - 7. Charles John Vivien Lawson-126590 (b. 21 May 1906-Summer Cove, Cork, Ireland)
    - 7. Hamish Lawson-126591 (b. Abt 1907/8-London, England)
  - 6. Alfred J Ludgate-126588 (b. Abt 1886/7-Tipperary, Ireland)
- 5. Mary Ludgate-126463 (b. Abt 18 Mar 1843-Cork, Ireland)  
sp: John Farmer-126503 (m. 7 Apr 1864 d. Bef 1901)
  - 6. Robert Farmer-126504 (b. 29 Jun 1864-Blossomfort, Cork, Ireland d. Bef 24 May 1878)
  - 6. Eliza Anne Farmer-126512 (b. 19 Dec 1865-Cork, Ireland)
  - 6. John Farmer-126508 (b. 27 May 1867-Cork, Ireland)
  - 6. Margaret Jane Farmer-126510 (b. 20 Dec 1869-Cork, Ireland)
  - 6. Richard Farmer-126513 (b. 25 Jul 1871-Cork, Ireland)
  - 6. Edward Farmer-126511 (b. 1 Apr 1873-Cork, Ireland)
  - 6. Catherine Farmer-126506 (b. 20 Jan 1876-Cork, Ireland)
  - 6. Anne Farmer-126507 (b. 20 Jan 1876-Cork, Ireland)
  - 6. Robert Henry Farmer-126505 (b. 24 May 1878-Cork, Ireland)
  - 6. Jane Anne Farmer-126509 (b. 29 May 1880-Cork, Ireland)
- 5. Catherine Ludgate-126465 (r. 31 May 1845-Ballyclogh, Cork, Ireland)
- 5. Paul Ludgate-126460 (r. 2 Jul 1847-Ballyclogh, Cork, Ireland)

5. Jane Ludgate-126464 (r. 1 Dec 1848-Ballyclogh, Cork, Ireland d. Bef 29 Jan 1850)
5. Jane Ludgate-126459 (r. 29 Jan 1850-Ballyclogh, Cork, Ireland)
5. Edmund Ludgate-126462 (r. 23 Jun 1851-Ballyclogh, Cork, Ireland d. Bef 28 May 1854)
5. Edmund Ludgate-126456 (b. Abt 28 May 1854-Cork, Ireland d. 11 Feb 1934)  
sp: Anne Bolster-126455 (b. 9 Dec 1857-Cork, Ireland m. 8 May 1890 d. 20 Feb 1944)
6. Margaret Jane Ludgate-126469 (b. 6 Feb 1891-Cork, Ireland d. 16 Apr 1961)  
sp: John Reginald Perrott-126470 (b. 12 Apr 1888 m. 17 Jan 1922 d. 29 Apr 1969)
7. Perrott-126453  
sp: Allison-126452
8. Perrott-126454
6. Joseph John Ludgate-126499 (b. Abt 1892/3-Cork, Ireland)
6. Robert Edmund Ludgate-126500 (b. Abt 1894/5-Cork, Ireland)
6. Thomas James Ludgate-126501 (b. Abt 1895/6-Cork, Ireland)
6. Ludgate-126502 (d. Bef 1911)
2. Jane Ludgate-126539 (r. 4 Feb 1740-Kilshannig, Cork, Ireland)
2. Anne Ludgate-126538 (r. 11 Mar 1743-Kilshannig, Cork, Ireland)
2. Mary Ludgate-126536 (r. 30 Oct 1746-Kilshannig, Cork, Ireland d. Bef 4 Oct 1747)
2. Mary Ludgate-126534 (r. 4 Oct 1747-Kilshannig, Cork, Ireland d. 24 Feb 1748)
2. John Ludgate-126541 (r. 29 Feb 1752-Kilshannig, Cork, Ireland)  
sp: Elizabeth Farmar-126542
3. Mary Ludgate-126543 (r. 25 Jul 1779-Kilshannig, Cork, Ireland)
3. Katherine Ludgate-126545 (r. 25 Nov 1781-Kilshannig, Cork, Ireland)
3. Matthew Ludgate-126548 (r. 10 Jun 1784-Kilshannig, Cork, Ireland)
3. Michael Ludgate-126551 (r. 12 Jul 1786-Kilshannig, Cork, Ireland)
3. Robert Ludgate-126554 (r. 13 Nov 1788-Kilshannig, Cork, Ireland)
3. Elizabeth Ludgate-126544 (r. 17 Oct 1790-Kilshannig, Cork, Ireland)
3. John Ludgate-126549 (r. 24 Feb 1793-Kilshannig, Cork, Ireland d. 6 Sep 1794)
3. Jane Ludgate-126547 (r. 22 Mar 1795-Kilshannig, Cork, Ireland)
3. David Ludgate-126552 (r. 2 Apr 1797-Kilshannig, Cork, Ireland)
3. John Ludgate-126550 (r. 19 May 1799-Kilshannig, Cork, Ireland)
3. Margaret Ludgate-126546 (b. 27 Jun 1801)
3. Robert Ludgate-126479 (r. 16 Aug 1802-Kilshannig, Cork, Ireland)  
sp: Susanna Willis-126480
4. Thomas Ludgate-126484 (r. 29 Jul 1838-Kilshannig, Cork, Ireland)
4. Michael Edward Ludgate-126472 (b. Abt 8 Feb 1840-Cork, Ireland)  
sp: Mary Ann McMahon-126473 (b. Abt 1840/1-England m. Abt Aug 1863)
5. Ludgate-126488  
[Arthur Edward Ludgate (b. 14 Jul 1864 Winchester, UK GRO 2c 99  
d. 10 Dec 1864 Winchester UK GRO 2c 66)]?
5. Ludgate-126489  
[Thomas Edward Ludgate (b. 23 Sep 1865 Winchester, UK GRO 2c 86 c. 15 Oct 1865 Winchester  
d. Q1/1951 Lewes UK GRO 5h 591)]?  
[sp. Bridget (Bedelia) Buckley (c. 16 Mar 1856 Cork d. Q1/1934 Newhaven UK GRO 2b 281  
m. 24 Apr 1888 Cork)]?
6. [Eileen Mary Ludgate (b. 21 Mar 1892 d. 28 Apr 1892)]?
5. Ludgate-126490  
[James Ludgate (b. 1 Jul 1866 Bangalore India)]?
5. Ludgate-126491  
[Walter Samuel Ludgate (b. 13 Nov 1867 Winchester UK GRO 2c 99 c. 26 Jan 1868 Winchester  
d. 21 Nov 1868 Winchester UK GRO 2c 71)]?
5. Ludgate-126492  
[Albert William Ludgate (b. 22 Dec 1868 Winchester, UK GRO 2c 99 c. 21 Feb 1869 Winchester  
d. 24 Jun 1870 Bellary India)]?
5. Ludgate-126493  
[Augusta Ludgate (b. 3 Mar 1871 Bellary, India c. 4 May 1871 Bellary, India  
d. 30 Dec 1954 Watford, UK GRO 4b 401)]?
5. Ludgate-126494
5. Frederick Ludgate-126475 (b. 17 Jun 1875 Gravesend, Kent d. 2 Dec 1921 Drumcondra)  
sp: Alice Emily Walshe-126476 (b. 3 Nov 1876 South Dublin d. 22 Oct 1922 Dublin m. 27 Aug 1900 Dublin)

- 6. Percy Ludgate-126477 (b. 19 Mar 1901 Dublin d. 1 Apr 1901 Dublin)
- 6. Violet Ethel Ludgate-126498 (b. 3-Nov-1876 South Dublin d. 22-Oct-1922 Drumcondra)
- 7. Barbara Ludgate (b. 19 Aug 1935 Brighton)

partner: William Thaddeus Hopkins b. 10 Apr 1897 Clonmel

- 8. Six children
  - 9. Seven grandchildren
  - 10. Six gt.grandchildren
- 6. Frederick Ludgate (b.4-Mar-1906 Henry St, Tullamore d.20 Mar 1906 Henry St, Tullamore)
- 5. Ludgate-126495
- 5. Ludgate-126496
- 5. Alfred Ludgate-126474 (b. 1 Apr 1881 Skibbereen, Cork Vol.5 p.593 d. 3 Sep 1953 Drumcondra)
- 5. Percy Edwin Ludgate-126471 (b. 2 Aug 1883-Townsend Street, Skibbereen, Cork, Ireland d. 16 Oct 1922 Drumcondra)
- 5. Ludgate-126497
- 4. Mary Alice Ludgate-126481 (r. 26 Jan 1842-Kilshannig, Cork, Ireland)
- 4. Elizabeth Ludgate-126482 (r. 28 Sep 1843-Kilshannig, Cork, Ireland)
- 4. Robert Ludgate-126486 (r. 13 Oct 1845-Kilshannig, Cork, Ireland)
- 4. Richard Ludgate-126487 (r. 19 May 1847-Kilshannig, Cork, Ireland)
- 4. David Ludgate-126485 (r. 6 Aug 1849-Kilshannig, Cork, Ireland)
- 4. William Joseph Ludgate-126483 (b. Abt 7 Jul 1853-Cork, Ireland)
  - sp: Mary Alice Ferris-126558 (b. Abt 1851/1853-Dublin City, Ireland m. 11 Aug 1877 d. Abt Feb 1932)
  - 5. William Henry Ludgate-126560 (b. 11 Aug 1878-Cork, Ireland)
  - 5. Charles Cecil Ludgate-126561 (b. Abt 1879/80-Cork City, Ireland)
  - 5. Isabella Rose Ludgate-126562 (b. 18 Aug 1881-Blackrock Road, Cork, Ireland)
  - 5. Robert Willis Ludgate-126563 (b. Abt 1882/1884-Cork, Ireland)
    - sp: Mary Barrett-126613 (b. Abt 1883/4-Cork City, Ireland m. 11 Oct 1908)
    - 6. Richard Gerald Ludgate-126614 (b. 17 Sep 1910-38 Marlboro Street, Cork, Ireland)
      - sp: UNKNOWN
    - 6. Margaret Mary Ludgate-126611 (b. 27 Jul 1913-6 St. Patrick's Terrace, Magazine Road, Cork, Ireland)
      - sp: John Joseph Coleman-126612 (b. Bef 1920 m. 8 Feb 1941)
      - 7. Mary P Coleman-126617 (b. Abt Nov 1942-Cork, Ireland)
- 5. Joseph Ferris Ludgate-126564 (b. Abt May 1885-Cork, Ireland)
  - sp: Annie Lilian Jennett-126572 (m. Abt Aug 1912)
  - 6. William George Napier Ludgate-126573 (b. 28 Dec 1913-17 Parkowen, Quaker Road, Cork, Ireland)
- 5. Arthur William Ludgate-126565 (b. Abt 1886/7-Cork, Ireland)
- 5. Edward Frederick Ludgate-126566 (b. Abt 1889/90-Cork, Ireland)
- 5. Ludgate-126567
- 5. Ludgate-126568
- 3. Thomas Ludgate-126553 (r. 30 Mar 1804-Kilshannig, Cork, Ireland)
- 2. Robert Ludgate-126540 (r. 31 Aug 1755-Kilshannig, Cork, Ireland)
- 2. Mary Ludgate-126535 (r. 18 Mar 1759-Kilshannig, Cork, Ireland)

## 11. SCSSTreasures Catalog

The homepage for this catalog is at: <https://www.scss.tcd.ie/SCSSTreasuresCatalog/>  
Click 'Accession Index' (1st column listed) for related folder, or 'About' for further guidance.  
Some of the items below are more properly part of the other categories of this catalog, but are listed here for convenience.

Accession Index	Object with Identification
<a href="#">TCD-SCSS-X.20121208.002</a>	Percy E. Ludgate Prize in Computer Science. Prize in memory of Percy Ludgate's novel 1909 design for an Analytical Engine, the next after Babbage's. c.1909.
<a href="#">TCD-SCSS-V.20121208.873</a>	Percy E.Ludgate, 'On a Proposed Analytical Machine', offprint of article in Scientific Proceedings of the Royal Dublin Society, Vol.12, No.9, pp.77-91, 28-Apr-1909.
<a href="#">TCD-SCSS-V.20170217.001</a>	Reprint of 1909 RDS Proceedings that includes article on Percy Ludgate's analytical engine, Scientific Proceedings of the Royal Dublin Society, Vol.12, No.9, including: Percy E.Ludgate, 'On a Proposed Analytical Machine', pp.77-91, 28-Apr-1909, reprinted 2016.
<a href="#">TCD-SCSS-V.20170124.001</a>	Nature volume that includes review of article on Percy Ludgate's analytical engine, Nature, Vol.81, including: C.V.Boys, 'A new analytical engine', pp.14-15, Jul-1909.
<a href="#">TCD-SCSS-V.20170221.001</a>	Napier Tercentenary Celebration Handbook that includes article by Percy Ludgate, Handbook of the Napier tercentenary celebration or modern instruments and methods of calculation, Ed: E.M.Horsburgh, including: Percy E.Ludgate, 'Automatic Calculating Machines', 1914.
<a href="#">TCD-SCSS-X.20121208.001</a>	Charles Babbage's Engines, Irish interactions with Charles Babbage regarding his Difference Engines and Analytical Engine, c.1843.
<a href="#">TCD-SCSS-V.20121208.870</a>	Ada Lovelace's famous translation with an 'Addition', Prof.J.G.Byrne's offprint of Ada Lovelace's translation of L.Menabrea's 'Sketch' of the Analytical Engine, incorporating an offprint of Charles Babbage's 'Addition', c.1843.
<a href="#">TCD-SCSS-V.20190903.001</a>	Lorcan Clancy, Podcast on Percy Ludgate. Audio recording of an interview at the West Cork History Festival, 2019. Electronic audio file in MPEG-3 format on CD and online.
<a href="#">TCD-SCSS-V.20190903.002</a>	Lorcan Clancy, 'An exploration of the life of Percy Ludgate'. Video and audio recordings of a presentation at the West Cork History Festival, 2019. Electronic video and audio files in MPEG-4 and MPEG-3 formats on DVD and CD and online.

This document is placed online in the catalog at:  
<https://www.scss.tcd.ie/SCSSTreasuresCatalog/hardware/TCD-SCSS-X.20121208.002/TCD-SCSS-X.20121208.002.pdf>

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### 13. Figures



*Figure 1: Photograph of Percy E. Ludgate  
Courtesy Prof. Brian Randell*

## ON A PROPOSED ANALYTICAL MACHINE.

2.4.

BY PERCY E. LUDGATE.

(COMMUNICATED BY PROFESSOR A. W. CONWAY, M.A.)

[Read FEBRUARY 23. Ordered for Publication MARCH 9. Published APRIL 23, 1909.]

I PURPOSE to give in this paper a short account of the result of about six years' work, undertaken by me with the object of designing machinery capable of performing calculations, however intricate or laborious, without the immediate guidance of the human intellect.

In the first place I desire to record my indebtedness to Professor C. V. Boys, F.R.S., for the assistance which I owe to his kindness in entering into correspondence with me on the matter to which this paper is devoted.

It would be difficult and very inadvisable to write on the present subject without referring to the remarkable work of Charles Babbage, who, having first invented two Difference Engines, subsequently (about eighty years ago) designed an Analytical Engine, which was shown to be at least a theoretical possibility; but unfortunately its construction had not proceeded far when its inventor died. Since Babbage's time his Analytical Engine seems to have been almost forgotten; and it is probable that no living person understands the details of its projected mechanism. My own knowledge of Babbage's Engines is slight, and for the most part limited to that of their mathematical principles.

The following definitions of an Analytical Engine, written by Babbage's contemporaries, describe its essential functions as viewed from different standpoints:—

“A machine to give us the same control over the executive which we have hitherto only possessed over the legislative department of mathematics.”<sup>1</sup>

“The material expression of any indefinite function of any degree of generality and complexity, such as, for instance:— $F(x, y, z, \log x, \sin y, \&c.)$ , which is, it will be observed, a function of all other possible functions of any number of quantities.”<sup>2</sup>

<sup>1</sup> C. Babbage: “Passages from the Life of a Philosopher,” p. 129.

<sup>2</sup> R. Taylor's “Scientific Memoirs,” 1843, vol. iii., p. 691.

Figure 2: Percy Ludgate's published description of his Analytical Engine [2]

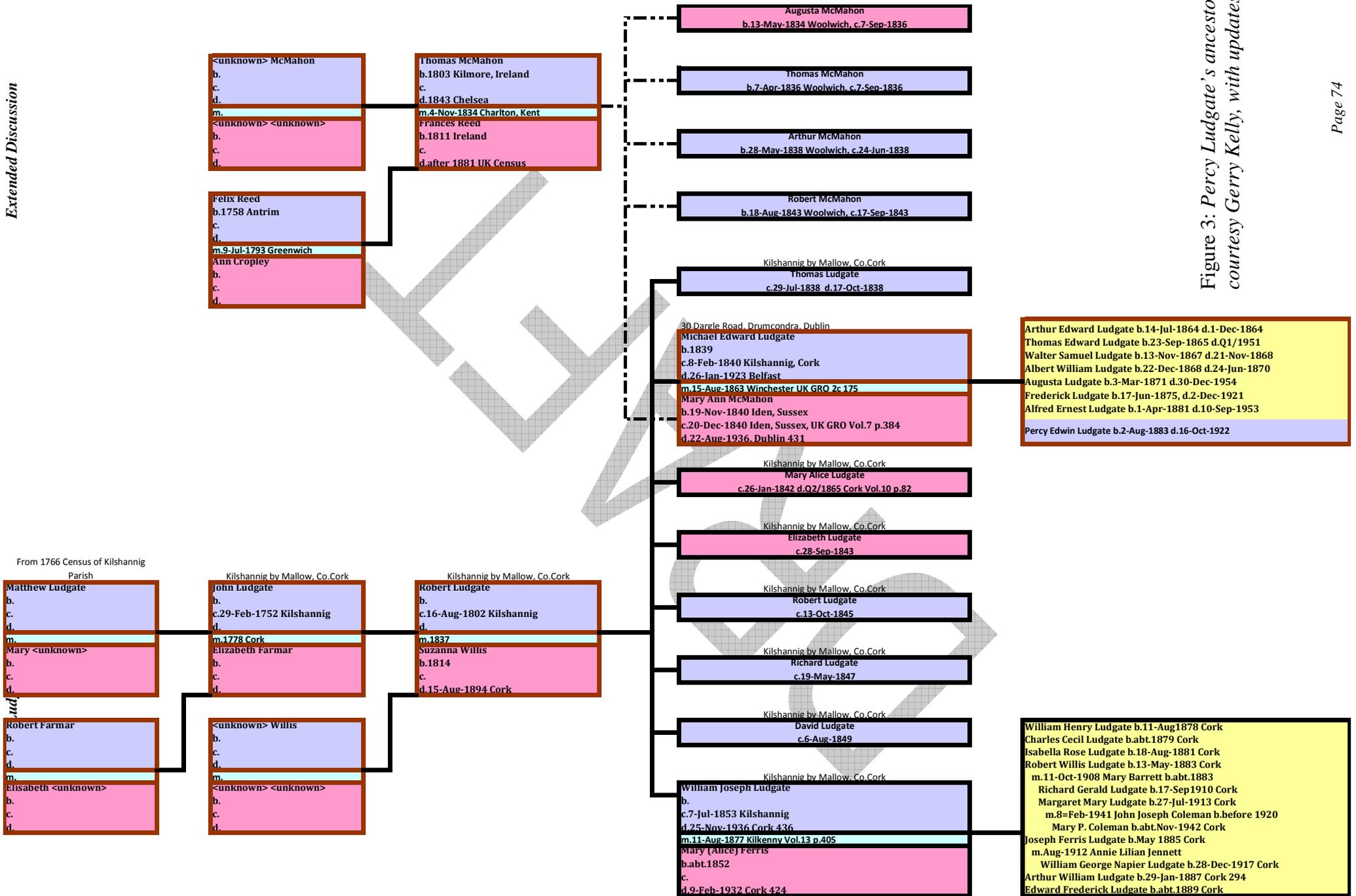


Figure 3: Percy Ludgate's ancestors, courtesy Gerry Kelly, with updates

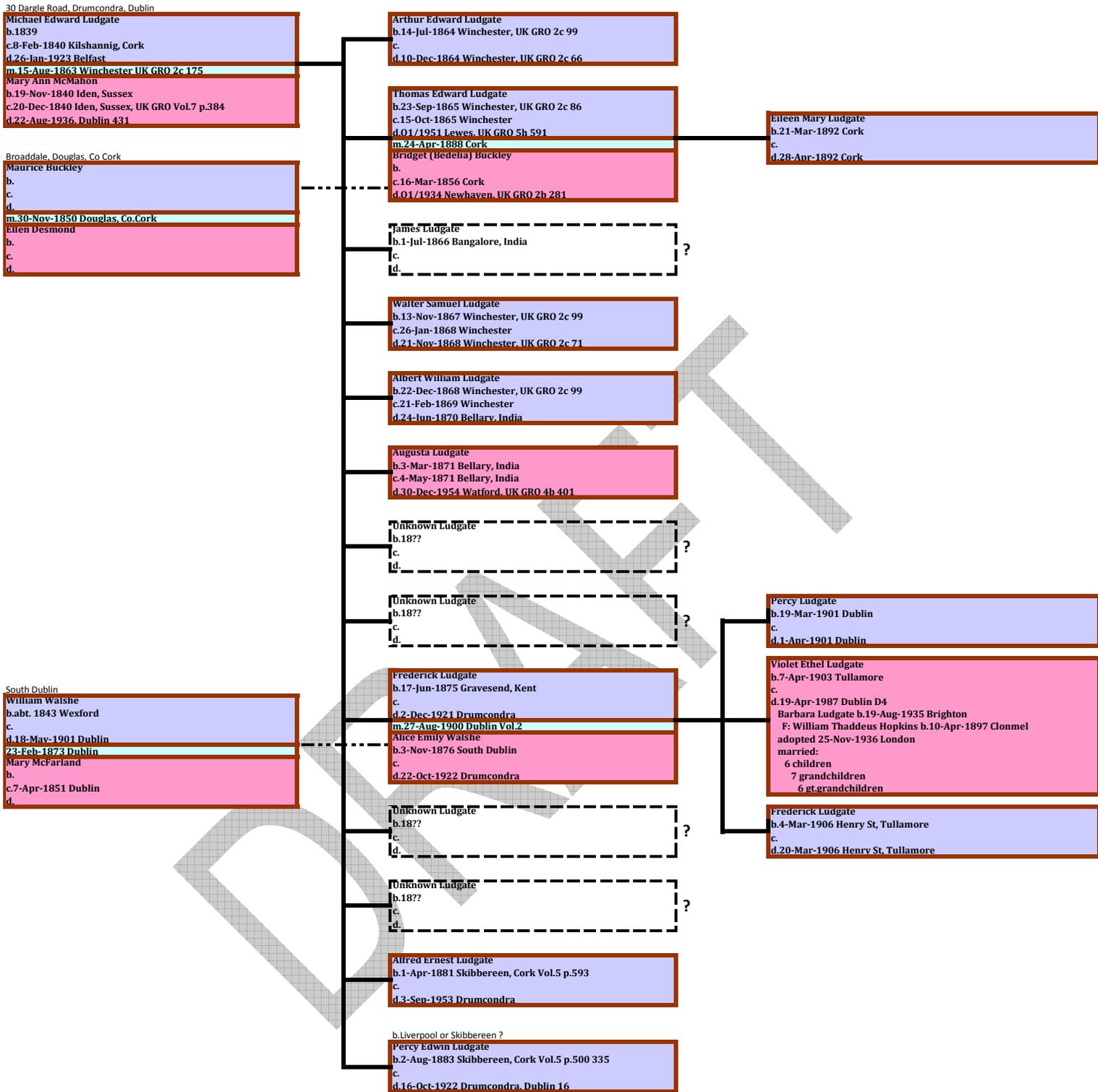


Figure 4: Percy Ludgate's parents and siblings, courtesy Gerry Kelly, with updates

Dublin	2697	Keogh, Park., Grocer & Purveyor	31 Bachelors' Walk
Dublin	2294	Keogh Bros., Premier Photographers	53 Talbot Street
Dublin	2902	Keogh, David & Co., Grocers, Wine Merchants	75 Lower Dorset Street
Ballsbridge	312	Keogh, J. P. & Co., Sack Merchants	83 Morehampton Road
Dublin	496	Keown, Jas. "Cuil Crannac"	2 George's Quay
Rathmines	256	Kerlin, P., House Painting Contractor	Leeson Park
Dublin	2007	Kernan, P. P., Phoenix Metal Works	108 Francis Street
Dublin	3067	Kernan & Co., Mineral Water Manufacturers	Blessington Street
Dublin	1497	Kerr, James, Electrician & Plumber	88 Camden Street
Dublin	1417	Kerr, Samuel, Solicitor	29 Eden Quay
Dublin	3710	Kettle, Laurence J., M.R.C.E.I.	66 Dame Street
Ballsbridge	318	<b>Kevans &amp; Son, Chartered Accountants</b>	6 St. Mary's Road
Dublin	550	Kidd, Fredk. Wm., Dr.	31 Dame Street
Dublin	629	Kidney, Robt J., Incorporated Accountant	17 Lower Fitzwilliam Street
Dublin	3726	Kiernan, C., Brush Manufacturer	39 Westmoreland Street
Dublin	2549	Kiernan, Jas., Builder & Contractor	96 Capel Street
Dublin	1379	Kiernan, Bernard & Co., Merchants	North Richmond Street
Dublin	892	Kilbride, Valentine, Solicitor	8 Little Britain Street
Dublin	1207	Kildare House, Merchant Tailors	1 Dame Street
Dublin	3719	Kildare Polo Club	13 Westmoreland Street
Leixlip	11	Kildare St. Club	Leixlip
Dublin	188	Kildare St. Club (Secretary only)	Kildare Street

Figure 5: 1913 Telephone Directory entry for Kevans & Son

**CORPORATE ACCOUNTANTS**

**Results of the June Examination**

The following are the results of the June Examination of the Corporation of Accountants, Limited:—

Thirty-three candidates entered—7 for the Final, 23 for the Intermediate, and 3 for the Preliminary. In the Final all passed, Percy E. Ludgate, William Codd, and Thomas Sanderson, Dublin, taking Honours.

Eleven passed in the Intermediate, 3 failed, 3 did not sit, and 6 Indian candidates were not reported upon. All passed in the Preliminary.

Other Dublin candidates who were successful are:—

Final—Jas Heaney Sanderson and Jas. V. N. MacDonagh.

Intermediate—Robt McGregor St. Amond, Fredr. W. J. Rickards, Thos. Jos. Taylor, John Jos. Stafford, Geo. Robt. Fitzgerald, Robt. Black Robertson, Saml. Geo. Young, Joseph Carroll.

On account of the Examination Papers, on their way to India, having gone down in the Mediterranean, and the lac of communication, the number of Indian candidates is not given, and the number who entered for the examinations in Bombay has not been ascertained.

Figure 6: Results of the June Accountancy Examination, Freeman's Journal p.2, 15-Sep-1917, with Percy E. Ludgate taking Honours

First name(s)	Michael
Last name	Ludgate
Name note	-
Age	23
Marriage year	1863
Marriage date	15 Aug 1863
Marriage place	Winchester
Father's first name(s)	Robert
Father's last name	Ludgate
Spouse's first name(s)	Mary
Spouse's last name	Mac Mahon
Spouse's age	22
Spouse's birth year	1841
Spouse's birth date	1841
Spouse's father's first name(s)	Thomas
Spouse's father's last name	Mac Mahon
County	Hampshire
Country	England
Volume	2C
Page	175

Figure 7: Marriage of Percy Ludgate’s parents

Note the marriage is recorded as in the parish of St.Thomas, Winton, Co.Southampton

‘Winton’ is the ecclesiastical name for Winchester

Courtesy Paul Hockie

9/6/1858	Enlists 2 btn 20 <sup>th</sup> Foot	Promoted Corporal 15/6/1858, Sergeant 1/4/1859	Winchester
30/9/1861	Transfers 3 btn 60 <sup>th</sup> Rifles	3 <sup>rd</sup> Class Sergeant Instructor of Musketry	
1871	British Army Worldwide Index	Sergeant Instructor In Music	Bellary, India
29/11/1876	To pension		3 years overseas service East Indies
1882	Collects pension Skibbereen		

Figure 8: Summary of Military Service of Percy Ludgate’s father Michael Ludgate

Courtesy Paul Hockie

28 Ludgate, Michael Edward, teacher  
of shorthand, 107.  
„Ludgate, Fred, teacher of shorthand  
„Ludgate, Miss Augusta, teacher  
of shorthand 118  
119

Figure 9: Thom’s 1891 Directory entry for 28 Foster Terrace

Thom’s Irish Almanac Dublin Street Directory entry for 28 Foster Terrace (off Foster St)

showing Percy Ludgate’s father Michael, brother Frederick, and sister Augusta (Courtesy Paul Hockie)

First name(s)	Michael Edward
Last name	Ludgate
Year	1894
Town/street	Foster-Terrace
County	Dublin
Section	Dublin Street Directory
Record set	Thom's Official Directory Of The United Kingdom Of Great Britian And Ireland, 1894. Irish Section
Category	Directories & Social History
Subcategory	Directories & almanacs
Collections from	Ireland

Figure 10: *Thom's Directory 1894, showing Michael Ludgate*  
*Courtesy Paul Hockie*

First name(s)	Michael Ed
Last name	Ludgate
Age	60
Birth year	1839
Where born	MALLOW CO CORK
Birth county	Cork
Residence	BALBRIGGAN
Residence county	Dublin
Year	1899
Date	08-Sep-1899
Role	Prisoner
Offence	NON PAYMENT OF DEBT
Prison	Kilmainham
County	Dublin
Register title	DUBLIN-KILMAINHAM PRISON GENERAL REGISTER 1898-1903
Book no	1/10/21
Item no	2
Record set	Irish Prison Registers 1790-1924

Figure 11: *Imprisonment of Michael Ludgate*  
*Courtesy Paul Hockie*

1883	2nd	August Percy Edwin Ludgate	No.	Michael Ludgate	Mary Ludgate formerly Pennington	Mary Ludgate Pennington	September 1883	Registrar
1883	Nineteenth	Johnston & Co. Dublin Dublin		London St.	W. Mahon	London St.		Registrar

Figure 12: Birth of Percy Edwin Ludgate, 2-Aug-1883  
 Courtesy Paul Hockie, from <https://www.irishgenealogy.ie/en/>

1922	16th	Percy Edwin Ludgate	m	Bachelor	38 years	Accountant	Catarhal Pneumonia 21 days	Certified Brother in attendance	October 1922	Registrar
1922	16th	30 Dargle Road								
1922	16th	100th November		Bachelor	1	Grocer's	Melaena	Certified	October 1922	Registrar
		18 Margaret Chambers					Joseph Byrne			

Figure 13: Death of Percy Edwin Ludgate, 16-Oct-1922  
 Courtesy Paul Hockie, from <https://www.irishgenealogy.ie/en/>

**LUDGATE Percy Edwin** [45] 23 January Probate of the Will of **Percy Edwin Ludgate** late of 30 Dargle Road **Dublin** Accountant who died **16 October 1922** granted at **Dublin** to Alfred E. Ludgate Accountant Effects £885 7s. 4d.

Figure 14: Will of Percy Edwin Ludgate, Dublin  
 Courtesy Paul Hockie

**LUDGATE Percy Edwin** of 30 Dargle-road **Dublin** died 16 October 1922 Probate **Dublin** to Alfred Ernest Ludgate accountant. Effects £192 in England. Sealed **London** 12 February.

Figure 15: Will of Percy Edwin Ludgate, London assets  
 Courtesy Paul Hockie

Title	Ludgate, Violet: will and associated papers
Reference	2008/1/6769
Date	1987
Creator	Probate Office
Scope and Content, Address of deceased:	Garden Flat, 39 Wellington Road, Dublin; date of death: 19/04/1987; date of grant: 11/09/1987
Extent	1 file
Language	English
Archival history	Transferred by the Probate Office in August 2008

Figure 16: Will of Violet Ludgate, Dublin  
 Courtesy Paul Hockie

First name(s)	Percy
Last name	Ludgate
Denomination	Established Church
Age	7
Birth year	1883
Year	1890
School	St George's Infants
Roll number	11624
Parish	St George's
Parent/guardian occupation	Shorthand Teacher
Residence	28 Foster Terrace
County	Dublin
Archive	National Archives of Ireland
Category	Education & work
Subcategory	Schools & education
Collections from	Ireland

Figure 17: *Percy Ludgate, 1890 school record*  
*Courtesy Paul Hockie*

First name(s)	Percy
Last name	Ludgate
Denomination	Established Church
Age	7
Birth year	1884
Year	1891
School	St George's Infants
Roll number	11624
Parish	St George's
Parent/guardian occupation	Teacher
Residence	28 Foster Terrace
County	Dublin
Archive	National Archives of Ireland
Category	Education & work
Subcategory	Schools & education
Collections from	Ireland

Figure 18: *Percy Ludgate, 1891 school record*  
*Courtesy Paul Hockie*

**CENSUS OF IRELAND, 1901.**  
(Two Examples of the mode of filling up this Table are given on the other side.)

**FORM A.** No. on Form R. 24

**RETURN of the MEMBERS of this FAMILY and their VISITORS, BOARDERS, SERVANTS, &c., who slept or abode in this House on the night of SUNDAY, the 31st of MARCH, 1901.**

No.	NAME and SURNAME.		RELATION to Head of Family.	RELIGIOUS PROFESSION.	EDUCATION.	AGE.	SEX.	RANK, PROFESSION, OR OCCUPATION.	MARRIAGE.	WHERE BORN.	IRISH LANGUAGE.	If Deaf and Dumb; Blind; Imbecile or idiot; or Lame.
	Christian Name.	Surname.										
1	Frederick	Ludgate	Head of Family	Irish Church	Read & Write	25	M	Commercial Traveller (Chemicals)	Married	England		
2	Alice	Ludgate	Wife	Irish Church	Read & Write	24	F		"	Dublin City		
3	Percy	Ludgate	Son	Irish Church			M		Not Married	Dublin City		
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												

I hereby certify, as required by the Act 63 Vic., cap. 6, s. 6 (1), that the foregoing Return is correct, according to the best of my knowledge and belief.  
*Matthew Keenan* (Signature of Enumerator.)

I believe the foregoing to be a true Return.  
*Frederick Ludgate* (Signature of Head of Family.)

Figure 19: 1901 Census: Frederick Ludgate, 24 Dargle Rd, Drumcondra  
NB: This Percy Ludgate is a baby who died shortly after, a nephew of Percy Edwin Ludgate  
From <http://www.census.nationalarchives.ie/search/>

**CENSUS OF IRELAND, 1901.**  
(Two Examples of the mode of filling up this Table are given on the other side.)

**FORM A.** No. on Form R. 30

**RETURN of the MEMBERS of this FAMILY and their VISITORS, BOARDERS, SERVANTS, &c., who slept or abode in this House on the night of SUNDAY, the 31st of MARCH, 1901.**

No.	NAME and SURNAME.		RELATION to Head of Family.	RELIGIOUS PROFESSION.	EDUCATION.	AGE.	SEX.	RANK, PROFESSION, OR OCCUPATION.	MARRIAGE.	WHERE BORN.	IRISH LANGUAGE.	If Deaf and Dumb; Blind; Imbecile or idiot; or Lame.
	Christian Name.	Surname.										
1	Mary	Ludgate	Head of Family	Church of Ireland	Read & Write	60	F		Married	England		
2	Alice	Ludgate	Son	Church of Ireland	Read & Write	19	M	Common school clerk (Engineering Trade)	not married	County both		
3	Percy	Ludgate	Son	Church of Ireland	Read & Write	17	M	Common school clerk (Engineering Trade) (not married)	not married	County both		
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												

I hereby certify, as required by the Act 63 Vic., cap. 6, s. 6 (1), that the foregoing Return is correct, according to the best of my knowledge and belief.  
*Matthew Keenan* (Signature of Enumerator.)

I believe the foregoing to be a true Return.  
*Mary Ludgate* (Signature of Head of Family.)

Figure 20: 1901 Census: Percy Ludgate, 30 Dargle Rd, Drumcondra  
From <http://www.census.nationalarchives.ie/search/>





**CENSUS OF IRELAND, 1911.**  
Two Examples of the mode of filling up this Table are given on the other side.

**FORM A.**

No. on Form B. *173*

RETURN of the MEMBERS of this FAMILY and their VISITORS, BOARDERS, SERVANTS, &c., who slept or abode in this House on the night of SUNDAY, the 2nd of APRIL, 1911.

Number.	NAME AND SURNAME.		RELATION to Head of Family.	RELIGIOUS PROFESSION.	EDUCATION.	AGE (last Birthday) and SEX.		RANK, PROFESSION, OR OCCUPATION.	PARTICULARS AS TO MARRIAGE.			WHERE BORN.	IRISH LANGUAGE.	If Deaf and Dumb; Blind; Imbecile or Idiot; or Lunatic.	
	Christian Name.	Surname.			State here whether he or she can "Read and Write," can "Read" only, or "Cannot Read."	Age of Males.	Age of Females.		Whether "Married," "Widowed," "Single," or "Engaged."	Completed years the present Marriage has lasted.	Children born alive to present Marriage.	Children born alive to previous Marriages.		Write the word "Irish" in this column opposite the name of each person who speaks Irish only, and the words "Irish & English" opposite the names of those who can speak both languages. In other cases no entry should be made in this column.	Write the respective infirmities opposite the names of the afflicted person.
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1	Thomas Edward	Ludgate	Head of Family	High Church	Read + write	45	—	Land Agent's Clerk	married	20	4	—	England	—	—
2	Bedelia	Ludgate	Wife	Roman Catholic	Read + write	—	46	—	—	married	22	1	none	County Cork	—
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

I hereby certify, as required by the Act 10 Edw. VII., and 1 Geo. V., cap. 11, that the foregoing Return is correct, according to the best of my knowledge and belief.

*James Mahony* Signature of Enumerator.

I believe the foregoing to be a true Return.

*T. Ludgate* Signature of Head of Family.

Figure 25: 1911 Census: Thomas Ludgate, 173 Gurteenaspig, Bishopstown, Cork  
From <http://www.census.nationalarchives.ie/search/>

Figure 26: 1901 Irish Census summary; courtesy Gerry Kelly

Date	Address	Christian Name	Relationship	Religion	Age	Year Born (est.)	Occupation	Marriage Status	Where Born
Census Date 30th. March 1901	30 Dargle Rd Glasnevin	Mary	Head of Family	Church of Ireland	60	1840/41	None Stated	Married	England
		Alfred	Son	Church of Ireland	19	1881/82	Commercial Clerk (Engineering Trade)	Not Married	County Cork
		Percy	Son	Church of Ireland	17	1883	Civil Servant National Education Office (Boy Copyist)	Not Married	County Cork
	24 Dargle Rd Glasnevin	Fredrick	Head of Family	Irish Church	25	1875/76	Commercial Traveller (Chemicals)	Married	England
		Alice	Wife	Irish Church	24	1876/77	None Stated	Married	Dublin City
		Percy	Son	Irish Church	under 1	1900/01		Not Married	Dublin City
	13 Mardyke (Cork Urban No. 7 Cork)	Thomas Edward	Head of Family	Information Refused	35	1865/66	Cashier - Land Agent's Assistant & Income Tax Recovery & Adjustment Agent	Married	England (Winchester)
		Bedilia	Wife	Roman Catholic	37	1863/64	None Stated	Married	County Cork
	14 Quay Street Balbriggan Urban North County Dublin	Michael Edward	Head of Family	Episcopalian Church of Ireland	61	1839/40	Pensioner from 60th. Rifles	Married	County Cork

Date	Address	Christian Name	Relationship	Religion	Age	Year Born (est.)	Occupation	Marriage Status	Where Born	Completed years married	Total Childred born alive	Children still living
Census Date 2nd April 1911	30 Dargle Rd Glasnevin	Mary	Mother	Church of Ireland	70	1840/41	None Stated	Married	England	48	13	5
		Alfred	Head of Family	Church of Ireland	29	1881/82	Solicitor's Clerk (General)	Not Married	County Cork			
		Percy	Brother	Church of Ireland	27	1883	Commercial Clerk (Corn Merchant)	Not Married	County Cork			
	17 Carlingford Terrace Glasnevin	Fredrick	Head of Family	Protestant (IC)	35	1875/76	Flour & Provision Agent	Married	England	10	3	1
		Alice	Wife	Protestant (IC)	35	1875/76/77	None Stated	Married	City of Dublin			
		Violet	Daughter	Protestant(IC)	8	1903/04	Scholar	Not Married	Kings County			
	173 Gurteenaspig, (part or rural) Bishopstown Cork	Thomas Edward	Head of Family	High Church	45	1865/66	Land Agent's Cashier etc.	Married	England	22	1	None
		Bedilia	Wife	Roman Catholic	46	1863/64/65	None Stated	Married	County Cork			
	Unknown Location	Unknown Child of Michael & Mary Ludgate	Son or Daughter		between 30 & 44 est.	between 1867 & 1880	Unknown	Unknown	Unknown			

Figure 27: 1911 Irish Census summary; courtesy Gerry Kelly

First name(s)	Thomas
Last name	McMahan
Marriage year	1834
Marriage date	04 Nov 1834
Place	Charlton
Spouse's first name(s)	Frances
Spouse's last name	Reed
County	Kent
Country	England
Source	St.Lukes Charlton 1813-1837
Record set	Thames & Medway Marriages
Category	Birth, Marriage & Death (Parish Registers)
Subcategory	Marriages & divorces
Collections from	England, United Kingdom

Figure 28: *Marriage of Percy Ludgate's maternal grandparents  
Thomas McMahan and Frances Reed*

Name	Mary Ann McMahan
Event Type	Christening
Event Date	20 Dec 1840
Event Place	Iden, Sussex, England
Father's Name	<a href="#">Thomas McMahan</a>
Mother's Name	<a href="#">Frances McMahan</a>

First name(s)	MARY ANN
Last name	MC MAHAN
Birth year	1840
Birth quarter	4
Registration month	-
Mother's last name	-
District	Rye
County	Sussex
Country	England
Volume	7
Page	384
Record set	England & Wales Births 1837-2006
Category	Birth, Marriage & Death (Parish Registers)
Subcategory	Births & baptisms
Collections from	United Kingdom, England

Figure 29: *Birth of Percy Ludgate's mother Mary Ann McMahan  
in Sussex Parish Register*

Last name	First name	Born	Died	Event	Record set	Location
McMahon	Frances	1846	—	1846	England & Wales Births 1837-2006	Liverpool, Lancashire, England
McMahon	Mary Ann	—	—	1840	England Births & Baptisms 1538-1975	Iden, Sussex, England
MacMahon	Augustus	1834	—	1836	England Births & Baptisms 1538-1975	Woolwich, Kent, England
MacMahon	Thomas	1836	—	1836	England Births & Baptisms 1538-1975	Woolwich, Kent, England
Mc Mahan	Arthur	1838	—	1838	England Births & Baptisms 1538-1975	Woolwich, Kent, England
Mc Mahan	Robert	1843	—	1843	England Births & Baptisms 1538-1975	Woolwich, Kent, England

Figure 30: Births of possible maternal aunts and uncles of Percy Ludgate (possible siblings of his mother Mary Ann McMahon)

The first and last entries could be for siblings who died in childhood

<<< CHECK BMD >>>

Index	Date	Name	Sex	Event	Age	Occupation	Cause of Death	Location	Registrar
431	1936	Mary Anne Ludgate	F	Widow	96 years	House Keeper	Senile Decay Cardiac failure Certified	RMacLanerty occupier St. Kevin's Hospital	Twenty fourth August 1936

Figure 31: Death of Percy Ludgate's mother Mary Ann McMahon on 22-Aug-1936 aged 96 years

The spelling of 'Ludgate' was transcribed into the BMD indexes as 'Leedgate' Courtesy Paul Hockie

Thomas	McMahan	Male	35	1806	Ireland
Francis	McMahan	Female	30	1811	Ireland
Augusta	McMahan	Female	7	1834	Kent, England
Thomas	McMahan	Female	5	1836	Kent, England
Auther	McMahan	Male	3	1838	Kent, England
Mary Ann	McMahan	Female	0	1841	-

Family member first name	Thos, Francis, Augusta, Thomas, Auther, Mary
Family member last name	McMahan
First name(s)	Thomas
Last name	McMahan
Occupation	Soldier
Gender	Male
Age	35
Birth year	1806
Birth county	-
Birth county as transcribed	IRELAND
Birth place (other)	Ireland
Street	East Street
Parish or township	Plumstead
City or borough	Greenwich
Town	-
County	London, Kent
Country	England
Registration district	Lewisham
Archive reference	HO107
Piece number	484
Book number	18
Folio number	45
Page number	17
Record set	1841 England, Wales & Scotland Census
Category	Census, Land & Substitutes
Subcategory	Census
Collections from	United Kingdom, England

Figure 32: 1841 UK Census: Percy Ludgate's maternal grandparents and family

Name	Arthur McMahan
Event Type	Census
Event Date	+1851
Event Place	Chelsea, Middlesex, England
Registration District	Chelsea
Gender	Male
Age	12
Occupation	Soldiers Son
Relationship to Head of Household	Boys In The Institution
Institution	Royal Military Asylum For Children Of Soldiers Of The Regular Army
Birth Year (Estimated)	1839
Birthplace	Woolwich, Kent
Page Number	12
Registration Number	HO107
Piece/Folio	1472 / 565
Affiliate Record Type	Household

Figure 33: 1851 UK Census: Percy Ludgate's maternal granduncle  
 This implies Arthur McMahan was an orphan in a military orphanage  
 His age (12 years in 1851, i.e. born 1838/39) tallies with expectation

First name(s)	Alfred
Last name	Ludgate
Registration year	1881
Registered quarter/year	Apr - Jun 1881
Registration district	Skibbereen
Volume	5
Page	593
Mother's last name (original)	-
County	Cork
Country	Ireland
Record set	Irish Births 1864-1958
Category	Birth, Marriage & Death (Parish Registers)
Subcategory	Births & baptisms
Collections from	Ireland

Figure 34: Cork register showing birth of Percy Ludgate's brother Alfred Ludgate

First name(s)	Percy Edwin
Last name	Ludgate
Registration year	1883
Registered quarter/year	Jul - Sep 1883
Registration district	Skibbereen
Volume	5
Page	500
Mother's last name (original)	-
County	Cork
Country	Ireland
Record set	Irish Births 1864-1958
Category	Birth, Marriage & Death (Parish Registers)
Subcategory	Births & baptisms
Collections from	Ireland

Figure 35: Cork register showing birth of Percy Ludgate

Surname	First name(s)	Age	District	Vol	Page
<b>Marriages Sep 1863</b>					
Ludgate	Michael		Winchester	2c	175
<b>Births Sep 1864</b>					
Ludgate	Arthur Edward		Winchester	2c	99
<b>Deaths Dec 1864</b>					
Ludgate	Arthur Edward		Winchester	2c	66
<b>Births Dec 1865</b>					
Ludgate	Thomas Edward		Winchester	2c	86
<b>Births Dec 1867</b>					
Ludgate	Walter		Winchester	2c	99
<b>Deaths Dec 1868</b>					
Ludgate	Walter Samuel	1	Winchester	2c	71
<b>Births Mar 1869</b>					
Ludgate	Albert		Winchester	2c	99

Figure 36: Winchester records of Ludgate births and deaths

Last name	First name	Born	Died	Event	Record set	Location
Ludgate	Albert William	1869	1870	1870	British India Office Deaths & Burials	Bellary, Madras
Ludgate	Augusta	1871	—	1871	British India Office Births & Baptisms	Bellary, Madras

Figure 37: Indian records of Ludgate births and deaths

Surname	First name(s)	Age	District	Vol	Page
<b>Births Mar 1873</b>					
Ludgate	Harry		Shiffnal	6a	647
<b>Births Jun 1874</b>					
Ludgate	Edith Mary		Shiffnal	6a	626
<b>Births Sep 1875</b>					
Ludgate	Frederick		Shiffnal	6a	624
<b>Births Mar 1877</b>					
Ludgate	Joseph Thomas		Shiffnal	6a	661

Figure 38: Shiffnal records of Ludgate births and deaths

Surname	First name(s)	Age	District	Vol	Page
<b>Births Sep 1875</b>					
Ludgate	Frederick		Gravesend	2a	412
<b>Births Dec 1876</b>					
Ludgate	Dora Louise		Gravesend	2a	448
<b>Births Dec 1877</b>					
Ludgate	Lionel James O		Gravesend	2a	453

Figure 39: Gravesend records of Ludgate births and deaths

First name(s)	Augusta
Last name	Ludgate
Birth year	1871
Birth date	3 Mar 1871
Baptism year	1871
Baptism date	4 May 1871
Place	Bellary
Presidency	Madras
Father's first name(s)	Michael
Father's last name	Ludgate
Mother's first name(s)	Mary
Mother's last name	-
Archive reference	N-2-52
Folio	68
Page	-
Catalogue descriptions	Parish register transcripts from the Presidency of Madras
Record set	British India Office Births & Baptisms
Category	Birth, Marriage & Death (Parish Registers)
Subcategory	Births & baptisms
Collections from	United Kingdom, UK None

Figure 40: Birth/baptism transcript of Percy Ludgate's sister Augusta Ludgate  
Transcription from British India Office Ecclesiastical Returns - Births & Baptisms



Figure 41: Birth and baptism of Percy Ludgate's sister Augusta Ludgate

First name(s)	Last name	Relationship	Marital status	Gender	Age	Birth year	Occupation	Birth place
Augusta	Ludgate	In Charge Visitor	Single	Female	30	1871	Deaconess (Missionary)	India
Marie	Futty	Visitor	Single	Female	18	1883	Deaconess (Missionary)	Yorkshire, England
Katie	Manion	Servant	Single	Female	19	1882	Housemaid (Domestic)	Liverpool, Lancashire, England
Margaret	Hooper	Servant	Single	Female	32	1869	Housemaid (Domestic)	Liverpool, Lancashire, England

Figure 42: 1901 England and Wales Census: Augusta Ludgate aged 30 years

Name	Augusta Ludgate
Event Type	Census
Event Date	1911
Event Place	St Pancras, Pancras W C, London, England
	Boarding House
County	London
Parish	St Pancras
Sub-District	South St Pancras
Registration District	St Pancras
Gender	Female
Age	UNCERTAIN
Marital Status (Original)	SINGLE
Occupation	PRIVATE MEANS
Birthplace	India Mysore Resident
Relationship to Head of Household	BOARDER

Figure 43: 1911 England and Wales Census: Augusta Ludgate aged 40 years  
 Note this shows residence in India, so presumably indicates was visiting UK in 1911

First name(s)	Last name(s)	DOB	Sex	Occupation	Marital status	Schedule	Schedule Sub Number
Augusta	Ludgate	?1874?	Female	Incapacitated	Single	79	9

Figure 44: 1939 Register of Leavesden London County Council Mental Hospital, Abbots Langley, Watford R.D., Hertfordshire, England: Augusta Ludgate, 'Incapacitated', aged 68 years

First name(s)	AUGUSTA
Last name	LUDGATE
Gender	Female
Birth day	-
Birth month	-
Birth year	1875
Age	80
Death quarter	1
Death year	1955
District	Watford
County	Hertfordshire
Volume	4B
Page	401
Country	England
Record set	England & Wales Deaths 1837-2007
Category	Birth, Marriage & Death (Parish Registers)
Subcategory	Deaths & burials
Collections from United Kingdom, England	

Figure 45: Death of Percy Ludgate's sister Augusta Ludgate aged 83  
Transcription from England & Wales Deaths 1837-2007, Leavesden Hospital 30-Dec-1954

**LUDGATE**—October 16, 1922, of pneumonia at his mother's residence, 30 Dargle rd., Drumcondra, Percy Edwin Ludgate, aged 38 years.

**LUDGATE**—October 22, 1922, at the Adelaide Hospital, Alice Emily Ludgate, relict of Frederick Ludgate, of 1 Tolka Villas, Richmond rd., Dublin.

Figure 46: Truncated death notices for Percy and Alice Ludgate  
*Irish Times* 18-Oct-1922 and 24-Oct-1922

**LUDGATE** – October 16, 1922, of pneumonia, at his mother's residence, 30 Dargle Rd, Drumcondra, Percy Edwin Ludgate, aged 38 years.  
Funeral tomorrow (Thursday), 9 o'clock, to Mount Jerome, no flowers.

**LUDGATE** – October 22, 1922, at the Adelaide Hospital, Alice Emily Ludgate  
Relict of the late Frederick Ludgate, of 1 Tolka Villas, Richmond Rd, Dublin.  
Funeral (private), this (Tuesday) morning, to Mount Jerome.

Figure 47: Full death notices for Percy and Alice Ludgate  
*Irish Times* 18-Oct-1922 and 24-Oct-1922



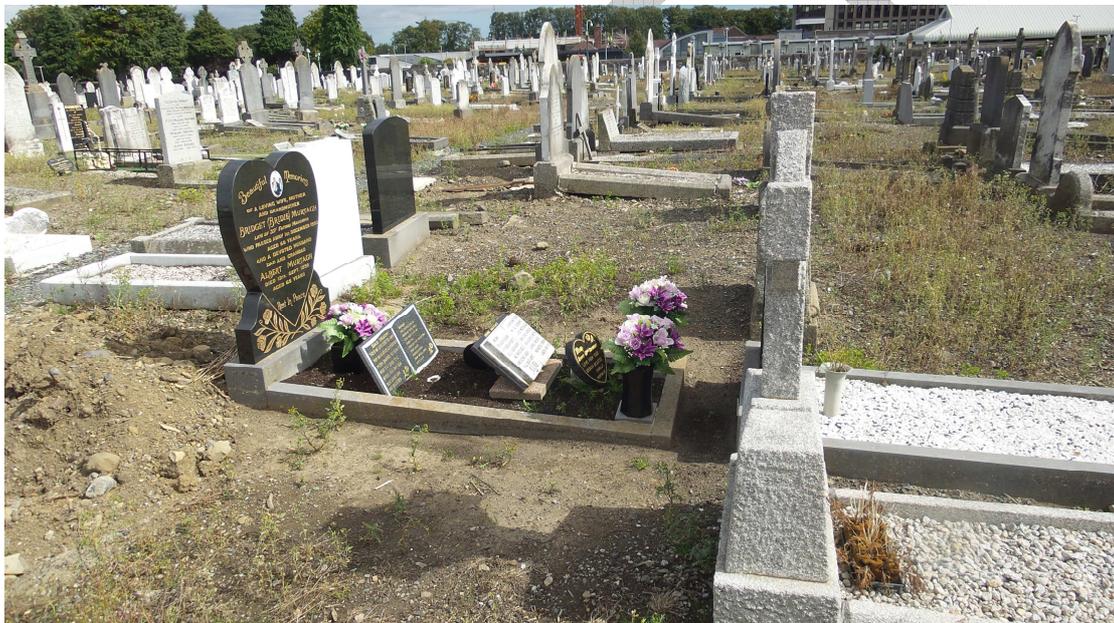


Figure 49: Mount Jerome Cemetery: location of Percy Ludgate's family grave

Grave 1 (foreground) is unmarked

Grave 2 is Murtagh grave

Grave 3 is unmarked

Grave 4 is unmarked

Grave 5 was unmarked Ludgate grave until Sep-2019

Grave 6 is unmarked

Grave 7 is Bishop grave

Grave 1 in right-hand foreground and shown in upper picture is Fox grave

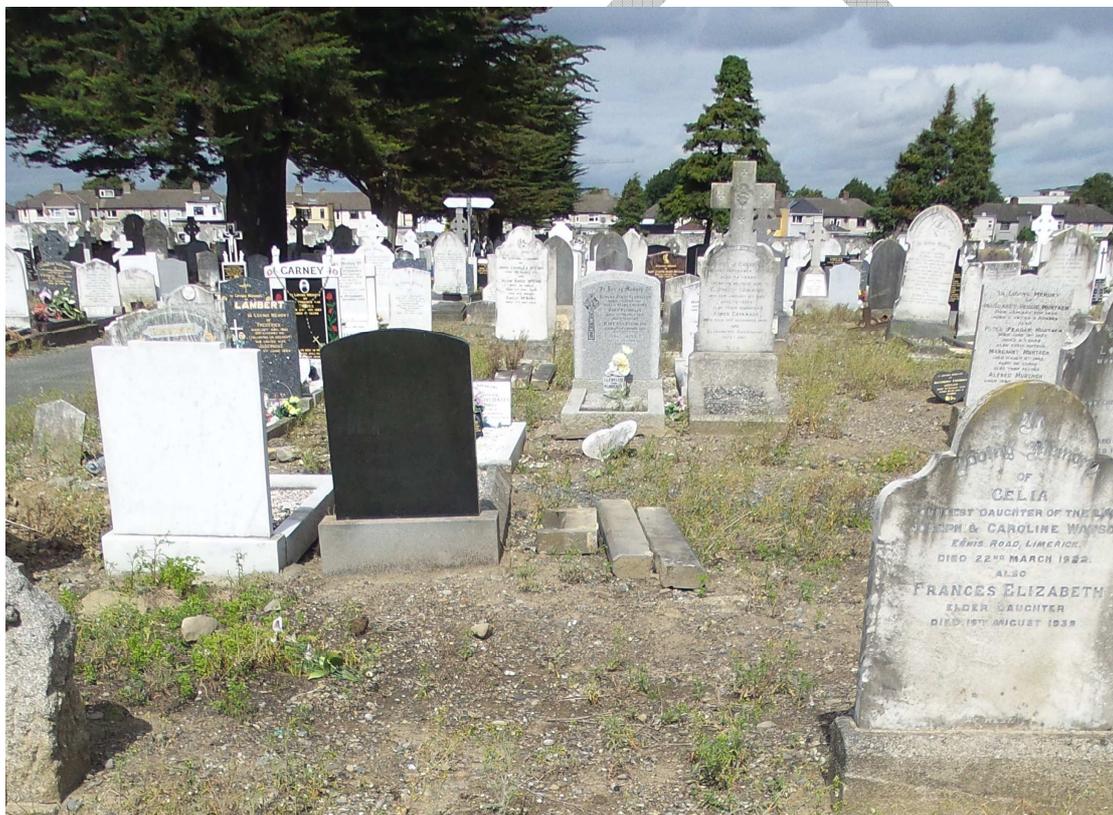
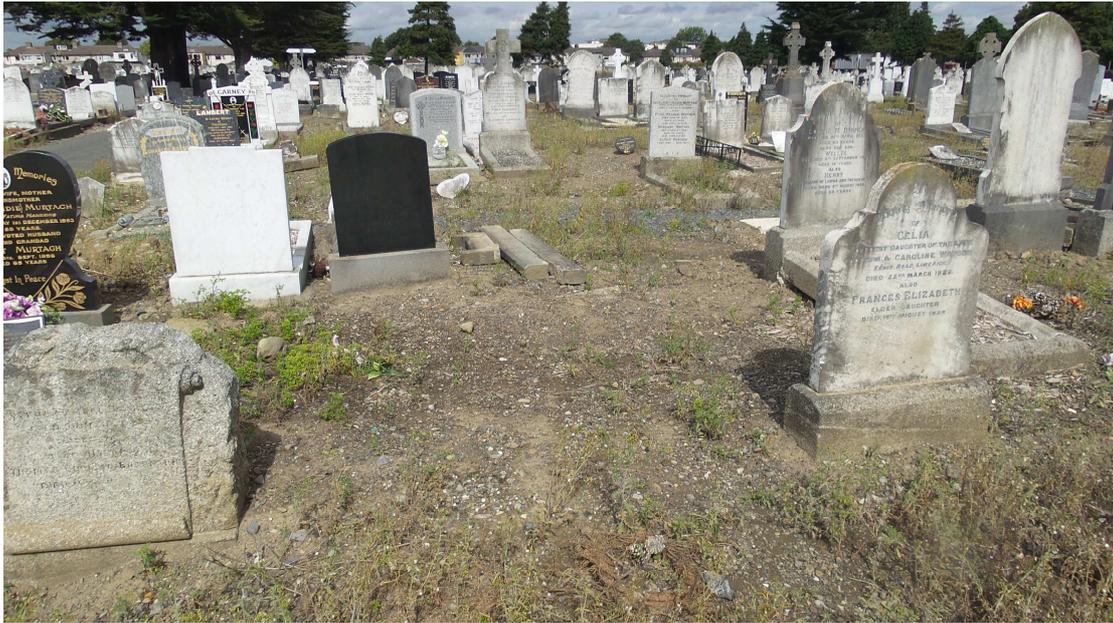


Figure 50: Grave of Percy Ludgate's family until Sep-2018  
(excepting his father)[towards viewer from stone beams]  
From Mount Jerome Cemetery records, grave A29-412-16113 (H/S?):

- Frederick Ludgate d.2-Dec-1921
- Percy Edwin Ludgate d.16-Oct-1922
- Alice Emily Ludgate d.22-Oct-1922
- Mary Ann Ludgate d.22-Aug-1936
- Alfred Ernest Ludgate d.3-Sep-1953

Grave purchased in perpetuity by Percy Ludgate in Dec-1921,  
then bequeathed in his Will granted 1923 to Alfred Ludgate, who remains the current owner



Figure 51: Grave of Percy Ludgate's family, from Sep-2019 onwards  
Now marked by the grandchildren of Violet Ethel Ludgate,  
with kind assistance of Alan Massey, Mount Jerome Cemetery, Harold's Cross, Dublin  
Headstone made by O'Neill Memorials  
4a Herberton Road, Crumlin, Dublin

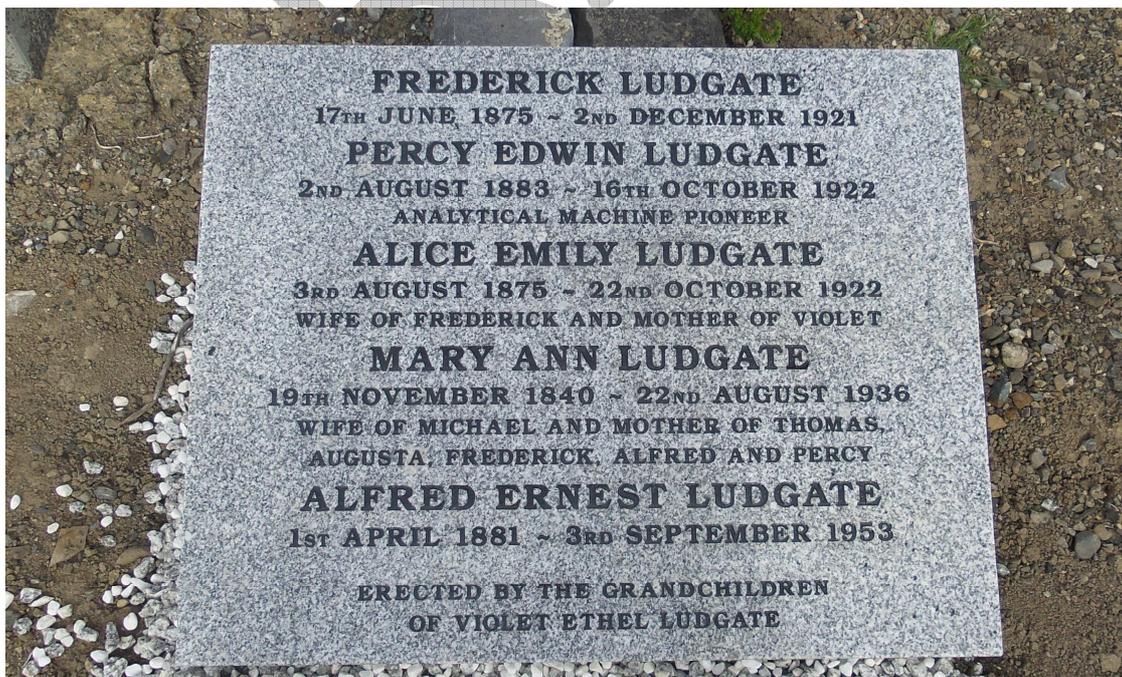


Figure 52: Grave of Percy Ludgate's family, now marked (from Sep-2019)

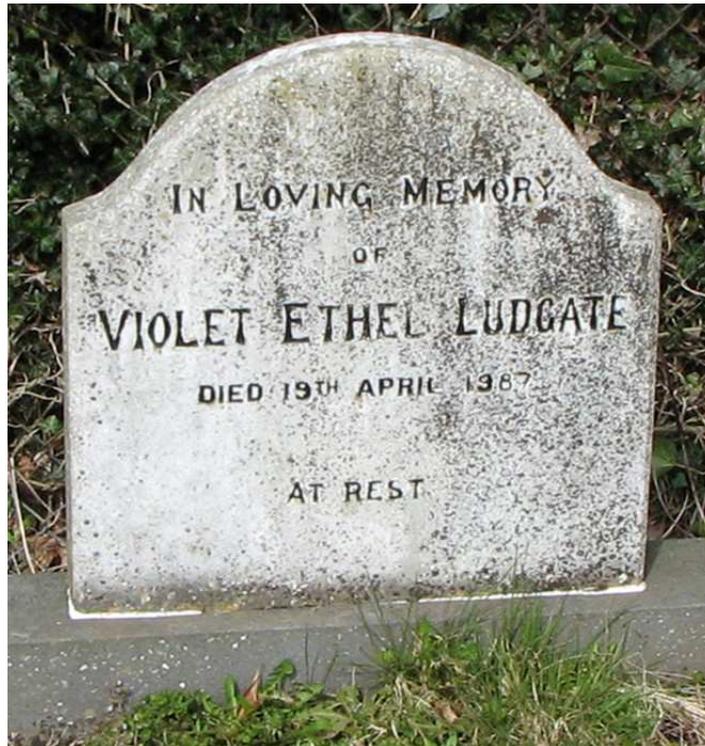


Figure 53: Gravestone of Percy Ludgate's niece Violet Ludgate Grave No.426, Cruagh Cemetery, Rockbrook, Rathfarnham, Dublin

From: <http://www.igp-web.com/IGPArchives/ire/dublin/photos/tombstones/dublin-cruagh-3/>

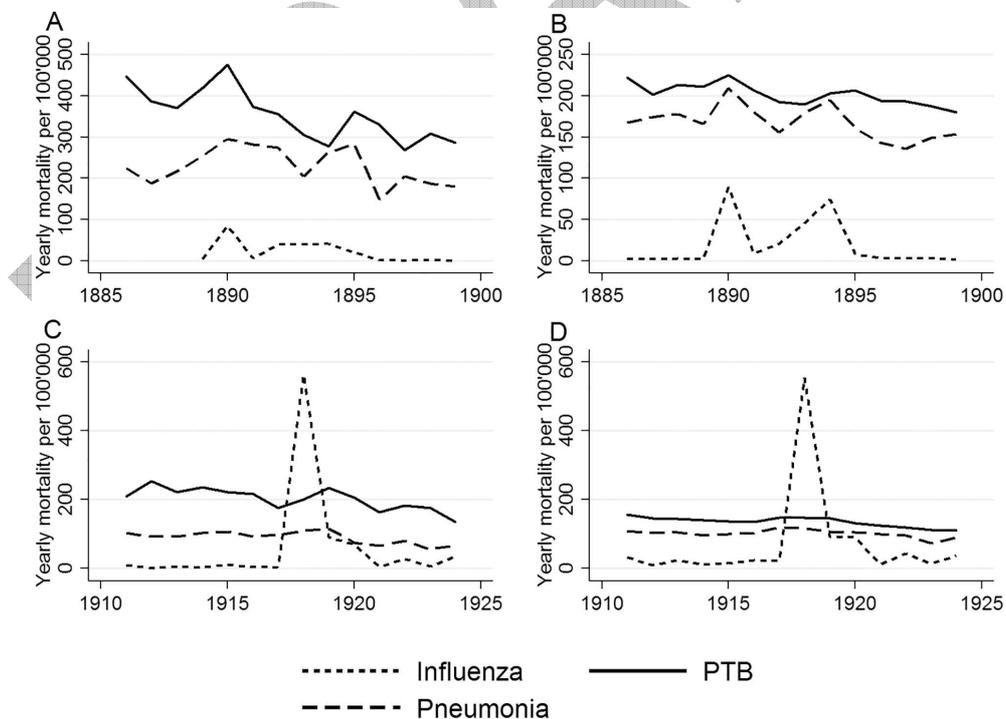


Figure 54: Yearly trends, pulmonary tuberculosis (PTB), influenza & pneumonia mortality per 100,000 people during the Russian and Spanish influenza pandemics in the city of Bern (A and C) and in Switzerland (B and D). From [52]

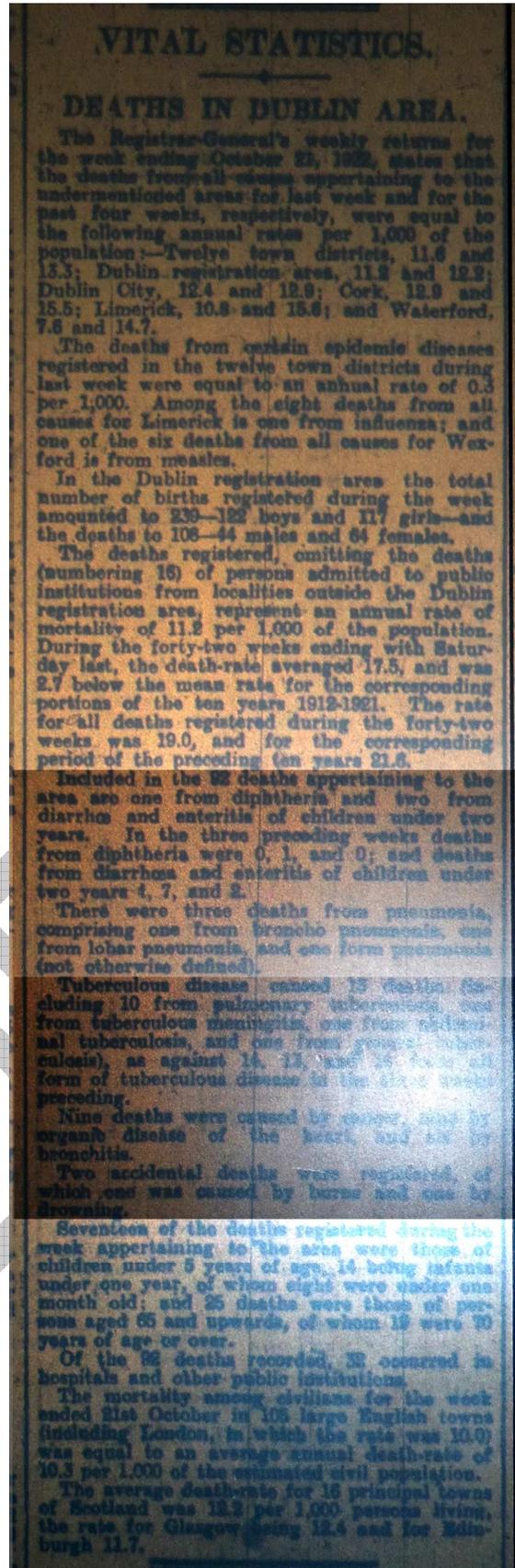


Figure 55: Irish Times October 1922 analysis of deaths statistics (enhanced)

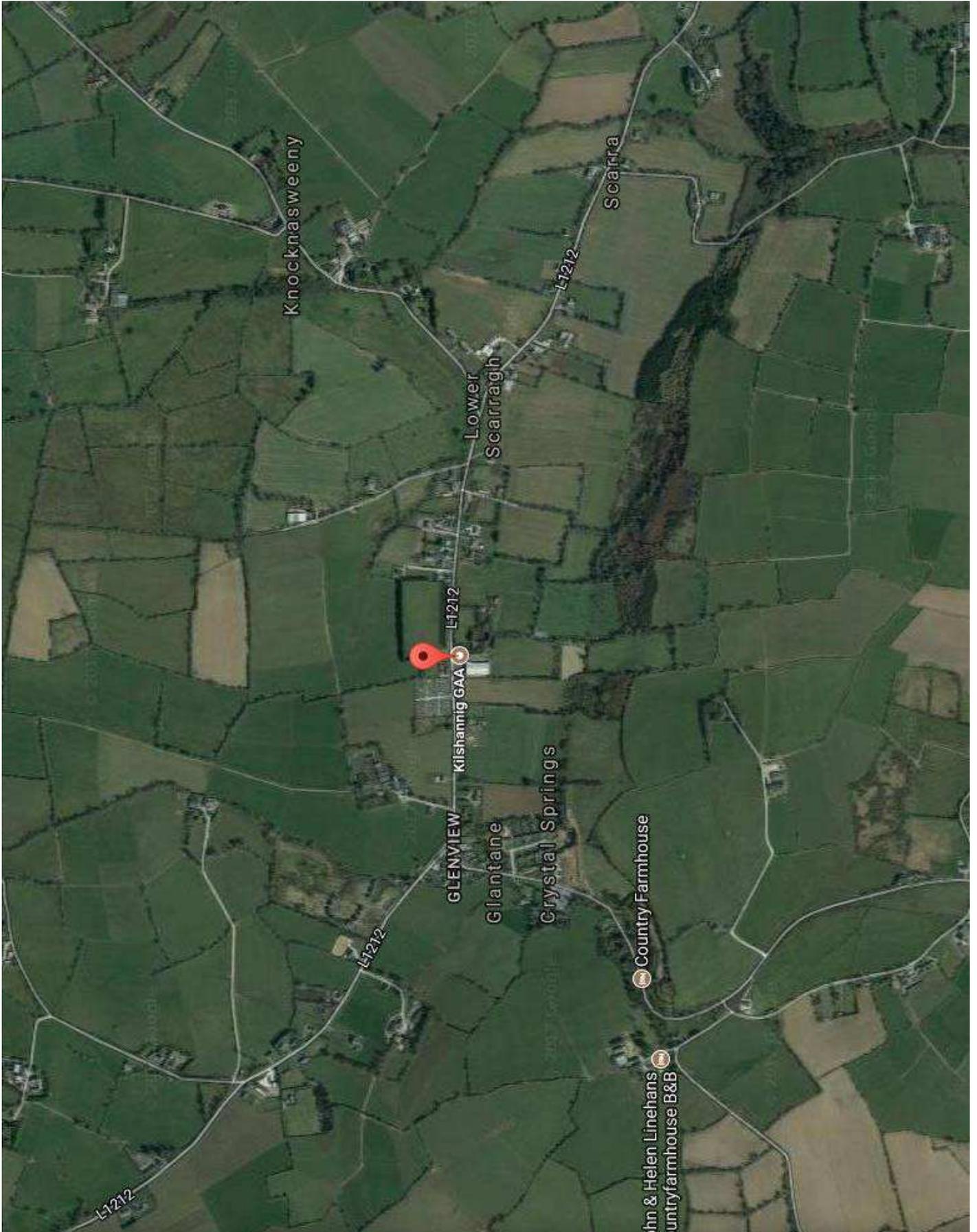


Figure 56: Satellite map showing Skarragh



Figure 57: *The Grubb “Optical and Mechanical Works”, Rathmines, 1875*  
Photo: *Universitätssternwarte, Vienna, extract from document by I.S.Glass, see [49]*



Figure 58: *Leinster Sports Club, on the site of the former Grubb works (“Optical and Mechanical Works”), Rathmines, Dublin*

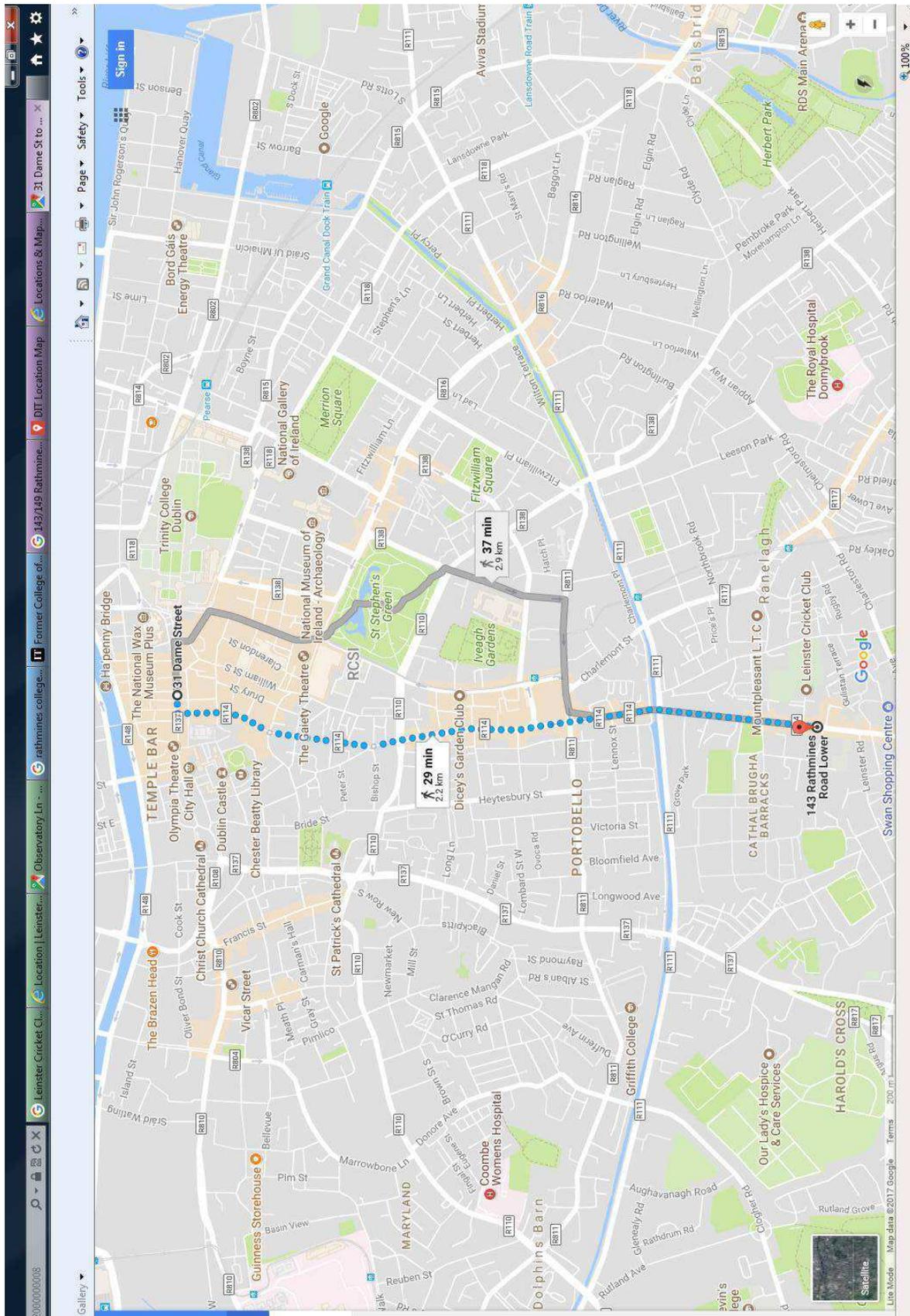


Figure 59: Map of walk from Kevans & Sons to Rathmines College of Commerce

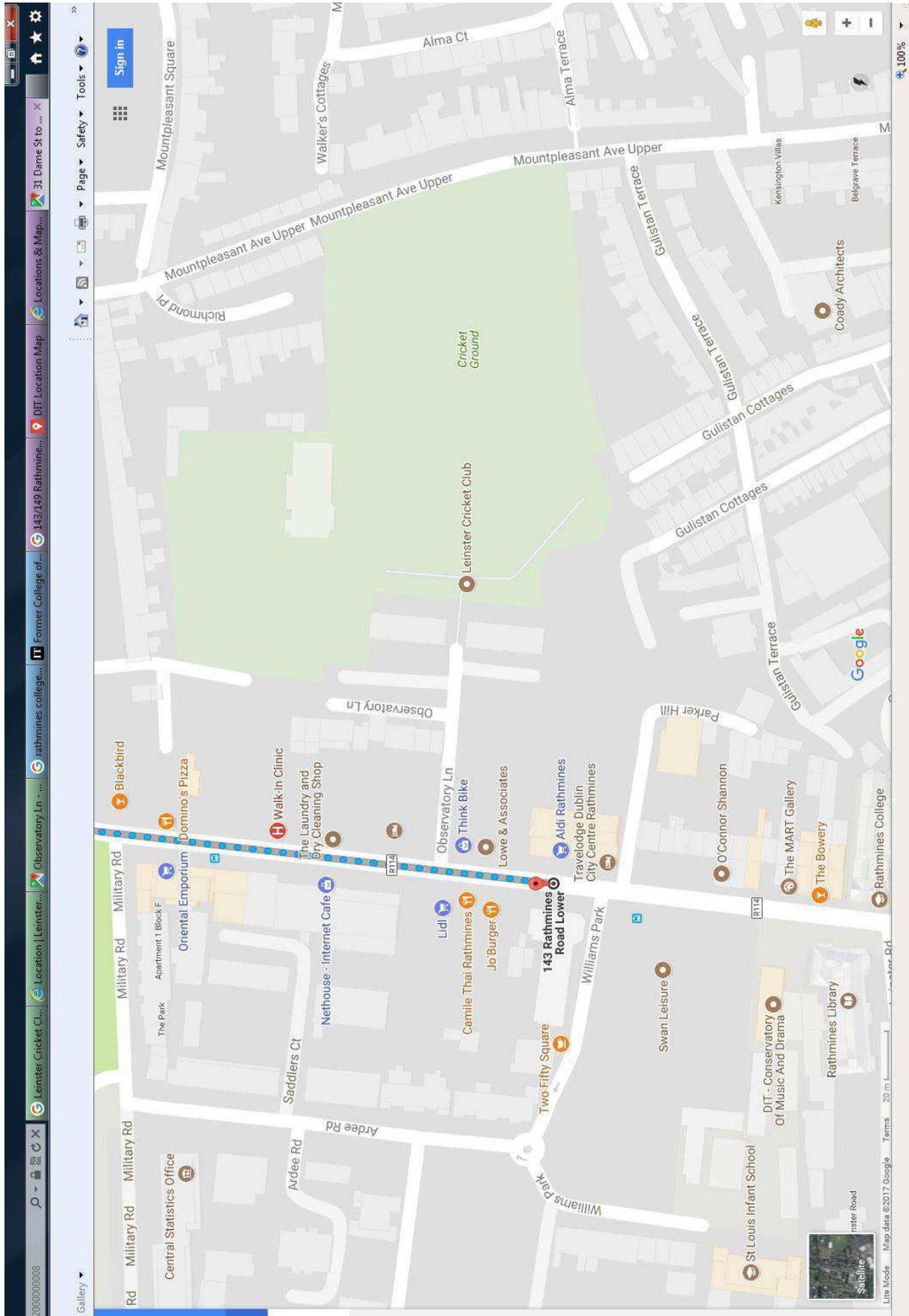


Figure 60: Map of end of walk to Rathmines College of Commerce



Figure 61: Satellite map of end of walk to Rathmines College of Commerce showing Leinster Sports Club 170 metres away



Figure 62: Satellite map of end of walk to Rathmines College of Commerce showing military barracks 400 metres away



Figure 63: *Percy Ludgate's home, 30 Dargle Road, Drumcondra*  
(house with grey door)

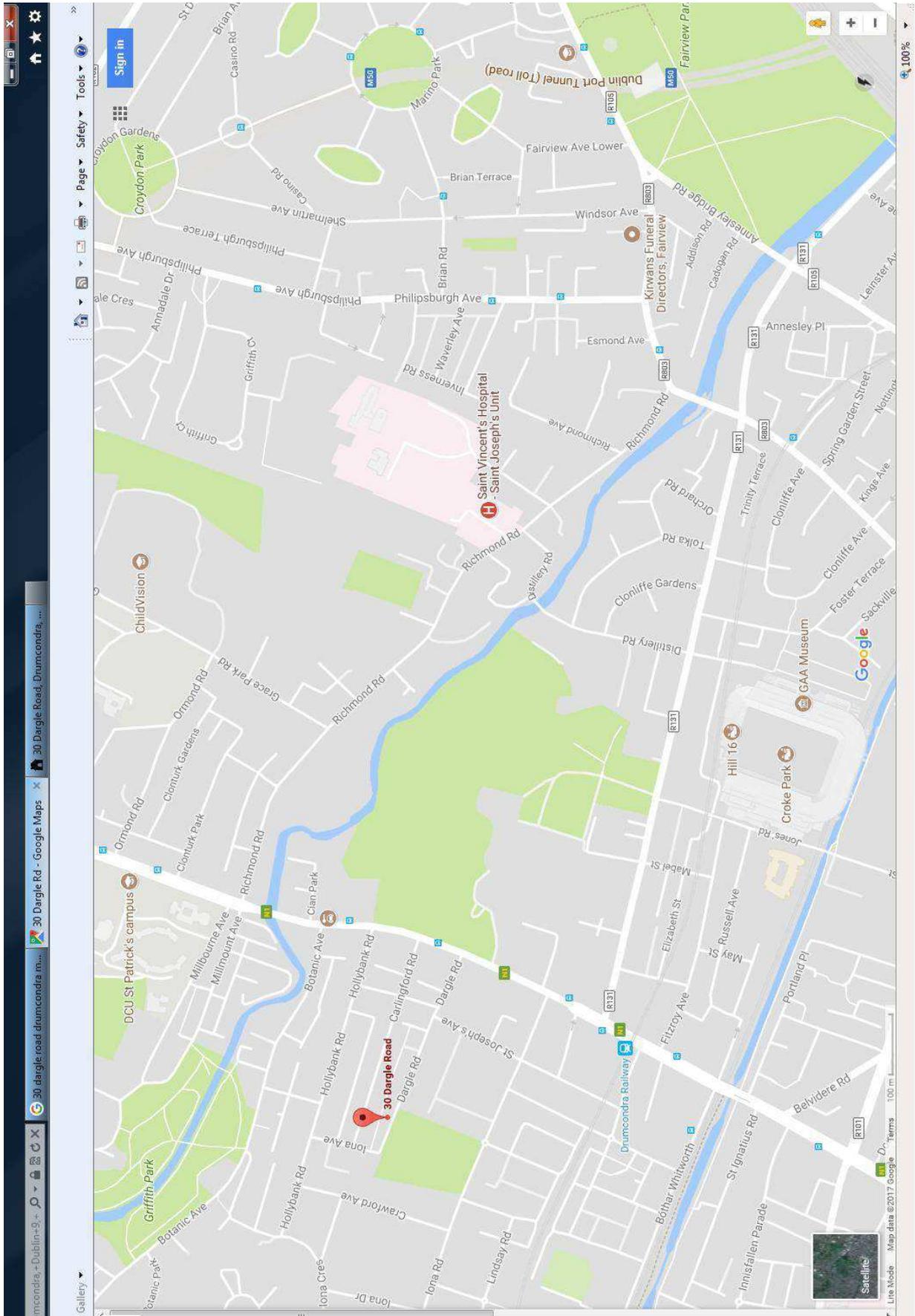


Figure 64: Map showing Percy Ludgate's home, 30 Dargle Road, Drumcondra Dublin, Ireland

## 14. Appendices

### 14.1. Appendix 1: Percy Edwin Ludgate's family tree

Appendix 1 (courtesy Paul Hockie) states the known genealogical facts about Percy Ludgate, his siblings, his parents, and his paternal and maternal families.

### 14.2. Appendix 2: Barbara Ludgate's family tree

Appendix 2 (courtesy Paul Hockie) states the known genealogical facts about Barbara Ludgate, her parents, and her paternal and maternal families.

### 14.3. Appendix 3: Eileen Mary Ludgate's family tree

Appendix 3 (courtesy Paul Hockie) states the known genealogical facts about Eileen Mary Ludgate, her parents, and her paternal and maternal families.

### 14.4. Appendix 4: Evidence

The final pages constitute a table of public and private evidence preserved in the School of Computer Science and Statistics, Trinity College Dublin, Ireland.