

ATHMMIX – Solution and Exposition

Introduction

The physical treasure box was tucked into a gap about six feet up in a tree next to the River Blackwater, near Witham. The main theme of the hunt was Dorothy Sayers (DLS), in particular the novels and short stories featuring Lord Peter Wimsey (LPW), with a diversion into Dante's *Inferno* (which DLS translated).

The quiz is in four parts:

1. The eight-page quiz document (as a pdf or html), which is sufficient in itself to locate the treasure.
2. The “red herrings” website, with its own set of questions, which provided hints to elements of the quiz as well as identifying the general location as Witham.
3. The “library” website. This was originally conceived as an aid to solvers so that they need not buy any DLS books, containing short summaries of each relevant novel and short story with pointers to the critical elements of each work. It also contains an additional, virtual, treasure hunt.
4. The initial poster, release notes and additional remarks on the Logica website. These all contained more or less obvious DLS and LPW allusions.

There are many links between the various parts which have usually been pointed out in both places in this solution.

The Poster

The poster had more relevant information and hints than is usual for an ATH poster: we were publishing the hunt rather late and wanted to get people interested and involved early on.

The coloured strips on either side illustrate the Kent Treble Bob Major change-ringing method, as discussed in more detail below. They were a big hint towards the theme.

“Even the trivial will seem profound” is, we hope, apt for an ATH, but it is also nearly a quotation from a Betjeman poem: “Imprisoned in a cage of sound, Even the trivial seems profound” from his poem Uffington, which refers to the tolling of a church bell. This is a hint to the bell-ringing theme of the quiz and the significance of the date on the poster. It is also a reference to St Pancras as Betjeman saved the station from demolition in 1967 – there are a number of such quotations set in the floor. St Pancras is one of the six DLS-themed locations clued in the RH website, each of which being used in the quiz somewhere.

The wine label is a Chateau d'Yquem 1957. LPW was a keen oenophile, while 1957 is the year of DLS's death. This is positioned next to the announcement of the release date, 17th December, which is the date DLS died.

LPW wrote a paper called *Notes on the Collecting of Incunabula* to which “The collecting of treasure” alludes – there's a fuller version of the title in the main hunt.

The Live Notes

17 Dec 09: The release instructions asked for the entries to include everything "whether trivial or profound". This refers again to the Betjeman poem. The instructions also included the phrase "...documents, in the case that you wish to make changes following a late sally..." alluding to *The Documents in the Case*, and to change-ringing (a 'sally' adorns the bell-rope). We were concerned to find the weekend before the quiz went live that notices had appeared at the top of the staircase down from the bridge, warning of works on the public footpath: hence our warning of a possible obstruction.

18 Dec 09: Our teammate-finding service was a genuine offer, but was probably issued too late to be of much use. We received only two enquiries. If future setters wish to repeat this we advise them to advertise earlier.

21 Dec 09: Two teams had reported failing to find the treasure, so we revisited Witham and found that the staircase had been admirably repaired and the route was open, and the treasure box was still in place. One ticket had been taken without our being informed, so we wrote an appeal asking for anyone who found a ticket to tell us. There was evidence of much digging in the tree.

22 Dec 09: We were concerned that hunters were looking down rather than up in the tree, so we made a small change to the text in the green box on page 2, replacing "Try down there!" with "Maybe in there." This had no effect on the encoded message as the "n" remained fixed. The characters Mortimer, Hubbard and Rawlinson appear in *The Undignified Melodrama of the Bone of Contention* (we stated this was to resolve "a contentious issue"). These three conspire to ensure that a body remains above ground rather than being buried below ground - a further hint to look above ground.

25 Dec 09: We published a link to a near replica of one of the red herring pages, with the hint that the page was somewhere to be found. The page was titled "O balow" and played a little known carol, *The three kings* (kkk.mp3). The musical arrangement is by Jonathan Dove, but the text was written by one Dorothy L. Sayers. (Googling "o balow" shows this easily. Surely no gall is bitterer than to miss this.)

01 Jan 10: We gave a hint that there was a "happy new year" page somewhere - it is in fact linked from the backwards-facing disreputable (sic) herring. The wish from Paul and Athmmix that you not get stranded at Fenchurch Street was in fact a wish from Athmmix alone about "Fenchurch Saint Paul". *The Nine Tailors* begins with Wimsey's car breaking down at Fenchurch St Paul on New Year's Eve.

11 Jan 10: "...or merely whimsical" a not very subtle reference to Lord Peter, as was a later mention of "the good Lord."

The Quiz Document

1. General Location of the Treasure

The Crossword

There are 60 cryptic crossword clues on pages 2-7 of the quiz. The answers to the crossword clues

can be assembled into a symmetrical grid, but it is not possible to deduce from the answers which are the 'across' and which the 'down' clues, although the clues themselves are presented in the traditional order of 'across' followed by 'down'. Appendix 1 below explains all the clue answers, and gives details of the thematic allusions contained. It becomes clear on assembly that there are eight letters missing from the completed grid (the source for these is given later in this solution).

Each page of the quiz with crossword clues contains one or more picture hints:

Page 2 – the statue of Lorna Doone (ref. clue XI.5)

Page 3 – a picture of Helen on the ramparts of Troy (ref. clue VI.7)

Page 3 – the group Black-Eyed Peas (ref. clue XX.10)

Page 4 – a graceful ballerina in the écarté position (ref. X.14)

Page 5 – a little picture of Snowy from the Tintin books (ref. 1.V)

Page 5 – some aligot coming out of its pot (ref. 1.XII)

Page 6 – portrait of John Donne (ref. 1.XV)

Page 7 – a da (ref. 14.III)

At the bottom of page eight are three pictures, being

- An elephant from the cover of **Uncle**, by J P Martin, illustrations by Quentin Blake
- A statue of **Meleager** and the Calydon Boar (in the Vatican museums)
- A portrait of **William Shakespeare**

These three together point to the LPW short story *The Fascinating Problem of Uncle Meleager's Will*. The plot summary and the grid (giving the correct rotation) for this can be found in the Library. A feature of the crossword in the DLS story is that the clues are all given as rhyming couplets, but this was beyond the wit of Athmmix to emulate.

Scattered over the pages of the quiz are the words of the rhyming couplet

Six pages of answers to keep to yourself
You'll find what you need on the library shelf

In the DLS story the crossword clues come without a grid, but with the couplet, "Truth, dear girl, was nobody's daughter. She took off her clothes and jumped into the water" which was a hint that the grid was in the impluvium. The "Six pages of answers..." couplet was a corresponding hint that the grid could be found either in your own library, if you had the required text, or else in our online Library.

The assembled grid is as follows:

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
1	M	A	D	A	M			6			F	A	U	L	D
2	I	R	O	N	I	C		T		B	I	L	B	A	O
3	G	I		A	L	I	G	H	I	E	R	I			P
4	H	O	T	R	O	D		E		L	E	G	L	I	N
5	T	C	H	A	U			A			D	O	O	N	E
6		H	E	T			M	R	S			T	I	E	
7			C			H	E	L	E	N			N		
8	E	T	O	N	I	A	N		W	H	I	F	F	L	E
9			M			R	E	B	U	S			E		
10		B	E	P			S	E	P			C	R	T	
11	M	E	D	I	C			L			P	O	N	O	S
12	R	H	Y	T	H	M		L		A	R	E	O	L	A
13	B	I		C	A	N	T	O	X	X	I	V			I
14	U	N	D	A	R	A		N		E	C	A	R	T	E
15	N	D	A	R	T			A			E	L	V	E	R

The four unclued lights are

Alighieri
The Comedy
Lo Inferno
Canto XXIV

In sympathy with the plot of the DLS short story, we would expect to find some indication of the treasure location in Canto 24 of The Inferno.

The Numbers

Scattered throughout the quiz are six questions in a fancy font called Xirwena, which is a Florentine Bastarda font inspired by an early manuscript edition of Dante's Commedia (the Codex Trivulziano).

Page 2: $\sigma(n) = \phi(n)$. $\sigma(n)$ is the divisor function and $\phi(n)$ Euler's totient function. There are many solutions to this equality; the first non-trivial one is 87.

Page 3: How many ways are there to tile this shape with six rectangles? The answer is 132. This is a Catalan number; and so the map forming the background to the shape is a fragment of the 14th century Catalan Atlas featuring Catalonia. It displays also a primitive Catalan flag.

Page 4: The first seventeen letters of an American address. The start of the Gettysburg address is "four score and seven" i.e. 87.

Page 5: Unotuo with the last two letters in red, this gives Uno Tre Duo or 132 (in Italian, albeit we've used "duo" (pair) rather than "due" (two), because it looked better to us that way).

Page 6: "Glorious things of thee are spoken" is a quote from Psalm 87 (KJV has "...are spoken of thee"; this is the form used in the well-known hymn).

Page 7: "Beauty herself is black" is from Shakespeare's dark lady sonnets, number 132.

We'll come back to the purpose of these numbers, but for now note that 87 and 132 are important, and $132 - 87 = 15 \times 3$.

Solvers may also be aware that Canto XXIV takes place in the Eighth Circle of Hell, in its Seventh pit. And perhaps that page one gives 87 changes of each of two methods (in addition to the initial rounds).

The Letter

Page 8 contains an enciphered letter. This uses a playfair cipher, keyword Bluntisham. Solvers were expected to solve the cipher by brute force, in the method outlined by LPW to Harriet Vane in the DLS novel *Have His Carcase* (and explained briefly in the Library). The single word on the first line, in the obvious location for a place or date, had the triply-repeated digraph EI---EI--EI which with a burst of inspiration might suggest Christchurch (DLS was born in the headmaster's house of Christ Church cathedral, Oxford; her father was later rector at the Christchurch living in Cambridgeshire). We also included words such as "armchair" and "treasure" in the plaintext to help the solver. There were three other possible ways to deduce the keyword. Bluntisham is thematic, being where DLS grew up (and is a suitable keyword being quite long with no repeating letters); Bluntisham is one of the five 'red herrings' online, each of which had a use in the quiz; and there are online freeware computer programs that solve playfair ciphers by brute force.

The decoded letter reads

Christchurch

Yes indeed, you were kind enough to lend me Paget Toynbee to help with my notes. I am so sorry you have been inconvenienced by its absence. I'm hunting for the difference between a rat and a souris, knowing that there's much to be found in the Longfellow every one quotes.

I've found a place among the serpents and an echo of it quindici terzetti later. "L'élan, c'est trouvé", Antoine might say, but I suspect he was calling Peter a moose.

And I am getting out of my library sometimes. I have a favourite walk up to the Catholic church, then south along the railway line to the river. I think I treasure these excursions just as much as my armchair and my books.

The first sentence of the letter (about Paget Toynbee) is taken almost verbatim from an actual letter written by DLS (in Witham) to Sir Ronald Storrs, who among other things was a lecturer on Dante. Paget Toynbee was an influential Dante scholar: evidently Sayers had borrowed one of his books on the subject. Umberto Eco in his book *Mouse or Rat* says that Sayers' translation of Dante "does the best in at least partially preserving the hendecasyllables and the rhyme". The Longfellow everyone quotes is his translation of *The Divine Comedy*.

Line 87 of Canto XXIV in the Longfellow translation is "She breeds, with Cenchri and **with Amphisbaena**". Cenchri and Amphisbaena are serpents, and hidden in the text are the letters WITHAM – a "place among the serpents".

The Cantos are written in "terzetti" or 3-line verses. 15 tercets later (quindici terzetti) we find line 132 "And **with a melancholy** shame was painted" which includes an 'echo' or repeat of WITHAM. The 'echo' is also an echo of Umberto.

The next four letters in line 132 are "ELAN" - "l'élan c'est trouvé". This phrase was uttered by a professional dance partner called Antoine to Harriet Vane as he watched her dancing with LPW in *Have His Carcase*. Antoine was implying that Harriet was dancing well because she has found the partner to inspire her: however "élan" is also the French for moose, so it is possible he was making a rather impolite pun on LPW's dancing ability. One may also read the phrase non-cryptically to indicate "you have found your inspiration" i.e. Witham

The Dorothy L Sayers Centre is at Witham Library, 18 Newland Street so this is a likely start of the directions to the treasure. Following the road uphill from the library one passes the war memorial (part of which is the picture on the top right on page 2), then an oddly-shaped green bench outside the police station (bottom left of page 3) before coming to what used to be the Catholic church but is now a house. This still has a small tower with a bell (photo on the right of page 4). From just opposite the ex-church there are some metal steps leading down to a footpath along a disused railway line (public footpath sign at the top of page 5). Following this path south one first crosses

Pasture Road (the path is marked by a “Blackwater Rail Trail” sign shown, with doctored text, in the photo on the bottom of page 6) and eventually across Blackwater Lane to some steps leading down to the river Brain (the view from which is shown on page 7)

We would have liked to use an appropriate handwriting font for the letter, but we wanted to make it possible for solvers to play with the text, so we chose not to represent it as an image file. The outcome is that most users will see a script font we guessed to look for on their computer.

2 Detailed Directions to the Treasure

The Bells

The DLS novel *The Nine Tailors* (TNT) uses a code in which directions to a hidden treasure are concealed within a longer piece of text. They are revealed by splitting the text into groups of eight letters, then picking one letter from each group. The letter is chosen by following the course of one particular bell within a peal.

The long descriptive text on a green background on page two seems an ideal candidate to hide the final directions to the treasure. All that is needed is to identify the method and the bell (although it was also possible to extract the directions by brute force).

The coloured strips down both sides of the poster and page one, and the left-hand side of the other pages, are representations of change-ringing methods (each colour represents one bell). The left-hand side of the eight pages of the quiz demonstrates a “short touch of Treble Bob Major” as described on the first page of TNT (and summarised in the Library). Those solvers who doubt that we have this exactly right, please see Appendix 2 for a full description. These were given as a hint to the relevant DLS novel and for their decorativeness.

The strip on the right-hand side of page 1 gives the first 88 changes of Double Helix Differential Major. One way of working this out was to write out the method in the usual change-ringing notation and google it, however the quiz provided a more elegant approach.

At the bottom of page five are three pictures, of:

1. A sculpture of a *double helix* (between Shelford and Cambridge, not far the treasure site from the last quiz set by the same team)
2. A *differential* gear
3. The insignia of a British army *major*

At the top of page six are pictures of more distinguished-looking gentlemen, namely

1. James Watson & Francis Crick (who discovered the DNA *double-helix*)
2. Gottfried Leibniz & Isaac Newton (at least one of whom discovered *differential* calculus)
3. John *Major*, a not particularly major Conservative prime minister

It is now clear which bell-ringing method is required.

The Smiths

Page four contains a group of photos of people called Smith. On the first three rows of pictures these are: Kelly, John, Victor Lewis, Maggie, Anna Nicole, Tim Pigott, Tommie, Harvey, Ed and Will. The bottom row has Adam Smith on a £20 note, a colon, and Jan Smith on the cover of her album 29 Dances. Taking the initial letters and the numbers we get KJV Matthew 20:29, or King James's Version of the Bible, Matthew, Chapter 20, verse 29: “And as they departed from Jericho, a great multitude followed him”.

The bells in the church of Fenchurch St Paul (in TNT) have names: Gaude, Sabaoth, John, Jericho, Jubilee, Dimity, Batty Thomas and Tailor Paul. The Smiths are telling us to follow the course of the fourth bell, Jericho.

In the DLS novel *Murder Must Advertise* one letter needs to be communicated to a third party in secret; this is done by addressing an empty envelope to a Mr {initial} Smith, the initial being the letter in question.

A simpler approach may be to note that one of the bells in the strip is marked as green, and the encompassing text is printed on a green background.

The Text on a Green Background

Although the primary function of the text was to conceal the detailed directions to the treasure, the text itself contained a few useful hints, such as the existence of online sections to the quiz and the treasure being *in* the tree. It may also have resonated with the families of ATH-solvers.

Following the path of the fourth bell in Double Helix Differential Major (and ignoring the initial rounds of 12345678 as was done in TNT) extracts the plaintext:

Follow the river downstream under the main road, then for another quarter mile to the platform, then go upstream until you find two sawn-off trees on your left. Look in the first.

Having reached the River Brain from the earlier directions, this tells the reader to go downstream under the A12 then to a small wooden platform where it meets the River Blackwater. From this confluence it is possible to follow the Blackwater upstream to two very conspicuous sawn-off trees. The treasure box was stored in a cavity in the first tree about six feet up, hidden behind a piece of rotten wood. This was clearly **in** the tree, not under it, or beneath it.

3 Links to Other Sections

The Train Timetable in Yellow

The train timetable shown on page six has the same stations as the one that is integral to the plot of the DLS novel *The Five Red Herrings*. The formatting of the times (with no leading zeros) is the same as that in the book and in other timetables from that era. The train times themselves are obviously a little fishy, with the time taken between each station in minutes translating into a letter e.g. 1 minute = A, 2 minutes =B, etc. The decrypted message gives directions to “go to page rhdothtm from here”. The reference to the **W**aterford, **W**exford and **W**icklown line was also a hint that a website was involved. (But the Waterford, Wexford, Wicklow and Dublin Railway genuinely existed, and could be reached by ferry from Stranraer.)

archive

The directions give a relative URL. Since the hunt is located in ~~directory~~ www.pablosath.com/archive/2009/ATH2009/ ~~http://public.togre.com/ ad/current/admmix/~~ the solver is instructed to go to ~~http://~~ [www.pablosath.com/archive/2009/ATH2009/ rh.htm](http://www.pablosath.com/archive/2009/ATH2009/rh.htm) which redirects to a veritable shoal of red herrings.

The Dragon

In the online version of the hunt the red picture of the dragon on page three is alive. Clicking on one of its eyes makes it breathe fire; clicking on the other eye then reveals a dark hole or casket in the

dragon's back. Clicking on this leads to the Library Vestibule. This follows the DLS short story *The Learned Adventure of the Dragon's Head* in which Wimsey's ten-year-old nephew, Viscount St. George, buys a 16th century book for five shillings which turns out to contain a clue to the location of a pirate's treasure. Wimsey works out that the treasure is concealed in the statue of a dragon; by pressing one eye he makes a fountain play and by pressing its other eye he makes its wings fold down revealing the hiding place of a treasure chest.

The quiz document contains four indications that this dragon is special.

- In the picture next to it, the gentleman is pointing directly to the dragon's eye.
- The ASCII code (see later for an explanation).
- The border quotes each contain one letter highlighted in orange. Read backwards, these spell out *Hic Ardet in Perpetuo Sol*. This is another reference to the Dragon's Head adventure, in which the treasure map has been annotated with "*Hic in capite draconis ardet perpetuo Sol*" – "Here the sun shines perpetually on the dragon's head".
- The picture of St George and the Dragon at the top of page eight.

4. Other

The First Page

The first line of the title "de ath **bon**" can be read as "Death B(red)on", LPW's two middle names.

Mmix is 2009 in Roman numerals, indicating the year of the hunt.

"Notes on the collecting of treasure" is a reference to LPW's paper *Notes on the collecting on Incunabula*.

The photograph on the left is that of Lord Palmerston in Parliament square where LPW was found extremely drunk in the early hours of the morning at the end of *Clouds of Witness*.

The toucan on the right is from the original Guinness advertising campaign, masterminded by DLS. The text has been removed from the poster, but the background is original, and shows the Glendalough Round Tower in County Wicklow, near the source of the water used for the beer, and distantly linked to the railway timetable on page six.

The coat of arms is that of the Wimsey family. The unencrypted motto is "I hold by my Whimsy" (see the section on the wine labels).

The ASCII

Each row in the coloured strips down the left of pages 2-8 had a mark in the corner of some of the elements. These gave the ASCII codes in binary of the following message.

[Congratulations on reading this and welcome to the 2009 Logica Armchair Treasure Hunt.](#)
[Somewhere in the south of England we've hidden a box for you to seek and find.](#)
[The site can be deduced from the pdf version, using armchair, books, maps, and wine.](#)
[In the online version there are further clues and additional information.](#)
[The missing letters give you GENT 1111. And some things can be read either way.](#)
[The article in question is in accordance with the Ashdene Press edition.](#)
[If you want to go somewhere new, read the timetable or try 0451166582. Happy hunting!](#)

The "missing letters" are the unclued letters in the crossword, which can be arranged to give GENT MCXI, or GENT 1111 treating the last four as Roman numerals.

“Some things can be read either way” is intended to help with the border quotes: the associated chapter numbers should be read forwards, whereas the orange letters should be read in reverse order.

The “article in question” is a reference to the DLS short story, in which the plot revolves around the use of a French indefinite article. Careful solvers will have noticed that whereas one unclued light in the crossword was “Lo Inferno”, most editions of the Dante either use “L’inferno” (in accordance with modern Italian usage) or simply “Inferno”. However, the Ashendene Press edition uses “Lo Inferno” which happily for us has the requisite nine letters.

“Read the timetable” refers to the link to the Red Herring website, while the number is the ISBN of Stephen King novel *The Eyes of the Dragon* and is a hint - together with the prompt to use the online version - to examine the picture of the dragon more closely, giving the link to the Library.

The Red Train Journey

This describes a possible journey in the current winter timetable. We start at "her school", clued by one of the Red Herring pages as Godolphin's, Salisbury. The reference to the school motto was a hint to a misparsed version which appears on that page. We catch the 8.47 to Ax-minster (where the River cuts the church). A little over an hour later we caught the train to Yeovil, with its statue of "Jack the Treacle Eater". Some complained that according to the current timetable the train is due to arrive at 27 past, not 25 past: so it is, but trains can legitimately arrive early. The 11.40 arrives in Exeter at 12.42, where we aimed "to meet someone leaving" that is an "exiter". Exeter cathedral is not as impressive as Salisbury Cathedral. We then caught the 13.04 to Reading (where we finished "reading" our book). There was "honey still for tea" as we arrived when "stands the clock at ten to three" (Rupert Brooke poem). This was a reference to our earlier ATH, when we buried the treasure in Grantchester. We just had time to catch the Oxford train, arriving at 15.18, where we went straight to her College, Somerville.

The initial letters of our stopping points (Salisbury, Axminster, Yeovil, Exeter, Reading, Somerville College Oxford) spell SAYERS.

The initial letters of each sentence in the original text spell DOROTHYL.

Had this been the first puzzle you solved, it might conceivably have advanced your cause.

The People

There are pictures referring to six thematic people.

Page 2 – on the green background, a picture of Dorothy Parker. Inspector Parker is a recurring character in the LPW stories.

Page 3 – an engraving of pirate Charles Vane. Harriet Vane agreed to become LPW’s wife in *Gaudy Night* after featuring in *Strong Poison* and *Have His Carcase*.

Page 4 – Laurel Hardy. Salcombe (or Sally) Hardy is a journalist who appears in a number of LPW books.

Page 5 – portrait of John Arbuthnot. Freddy Arbuthnot is a friend of LPW who understands the financial markets. [Clearly must be a fictitious character.]

Page 6 – Billy Bunter. LPW’s faithful manservant is Mervyn Bunter.

Page 8 – St. George and the Dragon, and some pickled gherkins. LPW’s nephew St George has the

nickname Gherkins.

These names are necessary to solve the final stage of the *Library* treasure hunt.

The Mistletoe

Scattered through the document are sprigs of mistletoe. They contain bunches of pearls (rather than the traditional berries), and allude to the short LPW story, *The Necklace of Pearls* in which a thief hides stolen pearls within decorative mistletoe.

The pearls are arranged in pairs as follows:

P3: (3,2)

P4: (1,5) (4,2)

P5: (4,2) (5,4)

P7: (5,3) (3,2) (1,1) (4,3)

If a simple 5x5 grid is constructed containing the alphabet (with I=J) such that (1,1)=A, (1,2)=B, etc, the sequence above decodes to the traditional ATH festive greeting “MERRY XMAS”.

While such a square is called a Polybius cipher, it is more specifically the basis for the “tap code” used by (among others) prisoners of war in Vietnam. Hence the picture of Fred Astaire & Ginger Rogers tap-dancing on page eight, with three sprigs of mistletoe saying “tap tap tap”, which happens also to be a phrase used by Wimsey in a shell-shocked nightmare in *Whose Body?*.

The Border Quotes

At the Top, Right, and Bottom of each of pages two to eight are three quotations. These are all taken from chapter headings in DLS novels, as follows:

Quote	Ch	DLS Book
1 2 T Come, tell me now, How sits this ring?	9	Have His Carcase
2 2 R I've tried the roots of trees, and I've tried banks, and I've tried hedges	13	Busman's Honeymoon
3 2 B Thou web of will, whose end is never wrought	1	Gaudy Night
4 3 T It causeth oft-times sudden madness	12	Gaudy Night
5 3 R Not a matter to be subjected to lengthy consideration	12	Clouds of Witness
6 3 B The days have slain the days And the seasons have gone by	6	Busman's Honeymoon
7 4 T Always yield to temptation	15	Unnatural Death
8 4 R His dearest friend and playfellow	18	Have His Carcase
9 4 B The track was slippery with spouting blood	1	Have His Carcase
10 5 T And here an engine fit for my proceeding!	20	Busman's Honeymoon
11 5 R This Strange Adventure may lead, in a later chapter, to the revealing of a mysterious crime	18	Unnatural Death
12 5 B I've laid my expectation in its grave	5	Have His Carcase
13 6 T O, Who hath done this deed	1	Clouds of Witness
14 6 R Drunk as a lord? As a class they are really very sober	19	Clouds of Witness
15 6 B [<i>Death hath</i>] So many doors to let out life	21	Unnatural Death
16 7 T Follow the knave; and take this drab away	18	Busman's Honeymoon
17 7 R With vollies of eternal babble	5	Unnatural Death
18 7 B If prayers and fair entreaties will not serve	8	Busman's Honeymoon
19 8 T Split the deep ocean, and unclothe the mountain	21	Have His Carcase
20 8 R Things are done without example - in their issue Are to be feared	14	Unnatural Death
21 8 B What does this mean?	20	Unnatural Death

Taking the chapter numbers as an index to the alphabet (A=1 etc) gives the apposite quotation “I'm all for a treasure hunt”, which was said by LPW in *The Nine Tailors* when he found out about the missing Wilbraham emeralds.

The quotations use a “Goudy” font, roughly consistent with some of them being from *Gaudy Night*.

The Vigenere

No ATH can be without a Vigenere cipher, albeit DLS never made use of one in the LPW novels. The blue text on page six satisfies the requirement. The word spacing was left in to help decrypt it from first principles. The keyword is SOHO which just happens to be where DLS's ashes were buried. The text deciphers to:

Well done, you have solved the Vigenere cipher. But to find the treasure location you will have to go out of the ordinary hunting course.

The chapter heading of *The Nine Tailors* II.4 quotes from Troyte's *Change Ringing* "Dodging is taking a retrograde movement, or moving a place backwards out of the ordinary hunting course". This hint means nothing very specific about dodging, but suggests that change-ringing is important to the hunt.

The Wine Labels

Page seven has a vertical strip of pictures on the right. These transpire to be the labels for various vintages of Chateau Mouton Rothschild Premier Cru, which commissions a new label each year from a distinguished artist. In order, these are:

- 1 1973
- 2 1977
- 3 1966
- 4 1982
- 5 1965
- 6 1978
- 7 1971
- 8 1976
- 9 1969
- 10 1968

Taking the two-digit year as a decimal ASCII code (A=65 etc) this reads "IMBRANGLLED" a rather nice word used in *The Nine Tailors* (as mentioned in the Library). It's the keyword to a Playfair cipher used to encode the Wimsey motto on the coat of arms on the first page.

The use of fine wine is a reference to the LPW's connoisseurship.

Other Pictures

On page six is a Minkowski diagram. In the DLS short story *Absolutely Elsewhere* she refers to the fact that (in the language of modern physics) the only perfect alibi for a crime is to be outside its light cone. This was included because the character supposed to be absolutely elsewhere was in fact in the library, in which this and many other stories are to be found.

Page 7 – Virgil from the Thunderbirds; being a reference to Dante's guide in *The Divine Comedy*.

5 The Red Herrings

Source page (rh.htm or SOURCE.HTM)

The red picture apparently has live links to five sets of questions, but there is a sixth in the bottom left corner. Each of the six pages eventually leads to a place connected to Sayers' life – five red herrings and one correct, in line with the plot of the book *Five Red Herrings*.

The quotation “A man who...” derives from the short story *The Piscatorial Farce...* A “pink sisket” is a fictitious fishing fly invented by Wimsey to unmask a treasure hunter masquerading as a fisherman. The picture might be illustrating the five steps of tying it.

The background colour is salmon – all hex colours in the pages are red fishy (bisque, lightsalmon, darksalmon, salmon).

The fish picture is titled Disreputable (as Wimsey described his purported cousin Death Bredon). It links to a Merry Christmas page which links back to the source page. The music on this page is *God rest ye merry gentlemen*”, which refers to question 2c below and the Kipper family song *Arrest these merry gentlemen*.

General Structure

Each question page has three pictures and three questions. Correct answers cause the background to change to a new fishy colour as described above. The pictures on the page each relate to one of the questions (a), (b) or (c). Except for the “non-red-herring” page four, the questions are structured as follows:

- a) Pertains to the Wimsey stories.
- b) Relates to a deliberate red herring (usually by the murderer) from a Wimsey story.
- c) Is an answer such as “red herring”.

Correct answers to (a), (b), (c) lead to a new page:

d) cluing a place linked to Dorothy Sayers' life. All six place names appear elsewhere in the main hunt.

Question 1

(a) *110a* – The number of Wimsey's flat in Piccadilly. The Piccadilly line runs from Heathrow terminal 5 through Leicester Square (anagrams). The picture shows 221b Baker St (Sherlock Holmes' address) which inspired 110a Piccadilly.

(b) *Bright* – John Bright opposed the Crimean War, “bright” is a term proposed for an atheist by Richard Dawkins et al. Bright the barber is a deliberate red herring in *Have his Carcase*. The picture shows a barber at work with a cut-throat razor.

(c) *(The) Scarlet Herring & other stories*, a book by Judge Parry. The picture shows *Five Little Pigs*, another of the stories in that book.

(d) *Christ Church, Oxford* - Where Dorothy Sayers was born

Pictures – “Grotesque Head” by Leonardo from Christ Church Oxford art gallery, a painting of Christ Church meadow by Paul Smyth, Ngaio Marsh who lived in Christchurch New Zealand. The herring links back to the source page.

Clues – “The cat and rat” were mummified in Christchurch Dublin.

“Only 7 in the ring” refers to the bells of Christ Church Oxford as per the music.

The remaining clues relate to Christchurch New Zealand: “Scottish sculpture” refers to the statue of Captain Scott by his sister. “Canterbury pilgrims” were émigrés to Christchurch, “PUBVUBIJ” is a one-letter offset of OTAUTAHU, the Maori name for Christchurch, “The University...” refers to the Canterbury Christchurch University and the University of Canterbury in Christchurch.

Music – “Great Tom is cast and Christ Church bells ring 1-2-3-4-5-6, and Tom comes last.”

Relevance - Christchurch is at the top of the playfair letter, giving a valuable clue to cracking it, as in *Have his Carcase*.

Question 2

(a) *Burdock* – from *The Undignified Saga of the Bone of Contention*. The picture is a can of dandelion and burdock

(b) *Virgil* – written on his tombstone, and quotation from Dante. The picture is Dante and Virgil meeting the harpies. A Latin quotation about the harpies was used as a deliberate red-herring in *Gaudy Night*.

(c) *(The) Kipper family* - The picture is from their album cover. They wrote *Arrest these merry gentlemen* (c.f. Christmas music above) and other spoof songs.

(d) *St Pancras*, where Sayers lived.

Pictures - Stained glass of St Pancras. Photo of gasworks near St Pancras station. Red herring links back to the source page.

Clues - One quote is from *Awayday*, a spoof by the Kipper family of *Gaudete* as popularized by Steeleye Span. The chorus is “Awayday, awayday loco in transit, omnibus, St Pancreas, Awayday.” The missing “e” in *Gaudete* indicates that St Pancreas should also lose an “e.” The other quote is based on *1984*, Winston heads to an area North and East of what had once been St Pancras station, to meet the proles.

This links to two previous ATHs: firstly to our 1995 Orwell ATH, and secondly, East/West were switched in homage to last year’s TSAE/TSEW confusion. (Honest! Would we make a mistake?)

Music -: *Freight Train* – train reference. (file name fr8.mid)

Relevance – the poster quotation “even the trivial will seem profound” appears by the memorial to Betjeman at St Pancras station.

Question 3

(a) *Denver*. John Denver the singer, Denver Colorado and Denver Sluice. The picture is of Denver sluice. There is a thematic link to the Duke of Denver.

(b) *Oliver*. Dr Aaron Azimuth is an alter ego of Barry Humphries a.k.a. Dame Edna. His first acting

role was Mr Sowerbury the undertaker in the musical *Oliver*. In *The Unpleasantness at the Bellona Club*, Mr Oliver is a deliberate red-herring with whom General Fentiman is meant to have spent the night. In fact his body was hidden in a phone booth with an “out of order” sign as shown in the picture.

(c) *Hareng rouge*. Maitre Hareng was the bailiff in *Madame Bovary*. Le Maitre Rouge features in *l'Ange du Chateau*. The picture is Posy Simmonds' Tamara Drew, in a similar style to her comic adaptation of *Madame Bovary*.

(d) *Bluntisham* where Sayers grew up.

Clues - The Blunt and Isham families lived in the two named stately homes.

Pictures - The Bluntisham village signpost has “BLUNTISHAM” replaced by a crossword clue for “Blunt is ham” One of the red herrings links back to the source page. The other is dead, but better dead than red.

Music: *The Tailor and the Mouse*. The Roud classification 3753 is the round *Three blind mice* Simple arithmetic: 9 x (tailor + mouse) – 3 x (3 mice) leads to *The Nine Tailors*. The bells at Bluntisham inspired the novel of this name.

Relevance – Playfair code word for letter on page 8

Question 4 – the non-red-herring page

There are several subtle differences between this page and the 5 others.

(a) *Muscarine*. Straight fact. It's common in many toadstools, including the fly agaric depicted. It was the poison in *The documents of the case* (**not** a Wimsey novel, unlike the others.)

(b) *Vane*. As in weather-vane, sounds like vein and in vain. The picture illustrates “Vain as a peacock.” Note that Harriet Vane is **not** a deliberate red herring – no one intended her to be suspected of her lover's murder in *Strong Poison*.

(c) *Herring's blush*. From James Joyce's *Ulysses* page 173 line 24 (1962 edition). Joyce refers in *Finnegan's Wake* to *Ulysses* as the “blue Book of Eccles”. The picture is of a *Papilio Ulysses*. But this herring is not “red”, as we shall see.

(d) *Witham*, where Sayers lived and died.

Clues -Why Is The Herring A Misnomer? An acrostic for WITHAM. Also, it suggests that this isn't a red herring at all, despite its blushing. The river Witham rises at OS reference SK8818, passes through SK9771 and ends at Boston at TM3244. Logan airport is at Boston USA.

Pictures - The 1905 train crash at Witham. Also, the grand sluice where the River Witham stops in Boston.

Music - *The Last Post*, in memoriam for the train crash victims and Sayers and her husband.

Why not red? - As described in the Library page, Joyce describes the “blue book of Eccles” as “usylesly unreadable.” So it's unread, or un-red. The page title “..or a sunburned penguin” is a pointer to the riddle “What's black and white and red all over?” whose intended answer is a

newspaper. Read = red again. This herring is un-red.

New Link - The blue book links back to SOURCE.htm which is the same as SOURCE.htm but with the herring pointing backwards. The backwards herring links onto page "...and a happy new year" (disreputable.htm, rather than disreputable.htm) with the music *Take Five* by Dave Brubeck (in 5:4 time). This indicates that there are five red herrings to be removed from the six.

Relevance - This is the only page without a genuine red herring. So we'd better stow the treasure there.

Question 5

(a) *Flatiron*. In *Have his Carcase* the body is found on the flatiron rock by Ms Vane. The picture is of a flat tyre being removed by a tyre iron (well, technically a bead-breaker). And a flat iron is used for pressing.

(b) *Pince-nez*. From the Sherlock Holmes story *The adventure of the golden pince-nez* in which the leading woman loses her glasses and runs down the wrong corridor of cocoanut [sic] matting. The picture of Marat in the bath relates to the corpse in the bath in *Whose body?* pince-nez were placed on the body as a deliberate red-herring.

(c) *Cherry herring*. Blood and Sand is a cocktail from Vermouth, whiskey and cherry brandy. The commonest brand of cherry branding is Heering, so it's sometimes known as cherry herring, probably due to a mishearing. By now people ought to have spotted that (c) is some sort of herring. The picture shows a suitable cocktail.

(d) *Godolphin's School Salisbury*, where Sayers studied.

Clues - Quotation from Flanders and Swann's song *The Armadillo*. "I was somewhat disconcerted by this curious affair; For a single armadillo you will own On Salisbury Plain in summer is comparatively rare, While a pair of them is practically unknown." The Godolphin Arab stallion is buried at Wandlebury Ring. Douglas Adams reference, "So long, and thanks for all the fish," is what the dolphins say when they abandon Earth to its fate. Hence - "Go, dolphins!" Godolphin's school motto is the Cornish "Franc Ha Leal Eto Ge".

Pictures - The grave of the Godolphin Arab. William Golding's *The Spire* was based on Salisbury Cathedral. The Cherry Heering bottle links back to the source page.

Music - "The Earl of Salisbury" Pavane by William Byrd (filename pavan.mid).

Relevance - Starting point for the train journey on page 7.

Question 6

(a) *Honorio*. This wonderful character tried to murder her brother the king and then sent an engagement ring to Attila the Hun, who used this as a pretext to claim half the Eastern Roman Empire. She is depicted on the coin. Peter Wimsey's mother is called Honorio.

(b) *Dawson*. He invented the fairy chess piece the grasshopper and composed many chess problems. The picture is of a rabbi in black with the Hebrew Halleluyah underneath. The Reverend Hallelujah Dawson was a deliberate red herring in *Unnatural Death*. In an attempt to frame him, he was sent some money and an alleged kidnap victim underlined the words "the black" in a magazine.

(c) *Red Herring*. The original coiner of the phrase “red herring” was William Cobbett, who said the scent would be cold by Saturday. He used the pseudonym Peter Porcupine, which was taken up by the German newspaper depicted.

(d) *St Anne’s Church Soho*, where Sayers was warden and where her ashes are buried.

Pictures -The church is shown, as is an “Ashes” cricket inset (Michael Vaughan kissing the pot). Underneath, SOHO is shown in Morse code using the herrings as separators and the red sun as dot and the yellow as dash. The sun pictures were taken from the SOHO telescope. One herring links back to the source page.

Music - A setting of Bert Jansch’s *Soho* (filename bert.mid).

Relevance - Soho - Vigenere codeword for blue text on page 6.

The Library Trail

The Library Trail is hinted at thus:

- dot code message “If you want to go somewhere new, read the timetable or try 0451166582.” The number is the ISBN for *The Eyes of the Dragon*
- The pirate on page three points at the dragon’s eyes
- The picture *St George and the Dragon* is a reference to the Wimsey short story *The Learned Adventure of the Dragon’s Head*, which introduces his nephew, Gerald St George.
- The orange letters in the quotations read (from bottom of p8 to top of p2) “hic ardet in perpetuo sol”. Googling >>hic ardet in perpetuo sol Sayers<< gives several hits for the Dragon’s Head story, which includes the notation “hic in capite dragonis ardet perpetuo sol” – “here the sun always shines on the dragon’s head”.

So you move your cursor to one of the dragon’s eyes on page three (it doesn’t matter which eye). The cursor icon changes to a cross-hair. Clicking on the eye makes the dragon flap its wings and breathe fire. Then clicking on the other eye makes it do it again, but this time the wings stay folded down, revealing a dark area on the dragon’s back. And clicking on the dark area takes you to a new page. This all alludes to the Wimsey story, though in the story the dragon spouts water rather than breathing fire, and the hole under its wings contains a long-hidden treasure chest.

All this works in the HTML but not the PDF hunt. It’s implemented with Javascript in the page source. We intentionally left the Javascript very obvious to anyone viewing the source code.

The new page announces itself as the vestibule “Conoscere la speranza voi ch’intrate”. This is an allusion to Dante’s “Lasciate ogne speranza, voi ch’intrate”, written at the gates of Hell in *The Inferno*. “Abandon all hope, you who enter” (We’ve given the quote as Dante may have written it: it’s often seen in the modern Italian form “Lasciate ogni speranza, voi ch’entrate”). Online translation software renders “Conoscere la speranza” into English as “Know hope”

The text in the vestibule reads:

You have arrived at the entrance to the Logica library. This library contains many marvels - incunabula, rare first editions, learned works on IT Project Estimation, and seminal papers on the Use of Z.

A few doubtful items, such as the colophon you see here, are confined to this vestibule. Perhaps even they can help you.

You need a password to enter the library.

Incunabula are printed books or other texts from before 1501. Wimsey collects them. In fact, in his very first appearance, at the beginning of *Whose Body*, he sends Bunter to an auction of incunabula, instructing him to bid for Wynkyn de Worde’s 1493 edition of de Voragine’s *Golden Legend*.

Perhaps the only book worth buying on IT Project Estimation was written by Paul Coombs, whom we remember especially during the ATH.

The Use of Z is a paper by Rosalind Barden, Susan Stepney, and David Cooper. Z is a formal method for the specification of computer systems. Rosalind Barden is Logica’s expert on this important subject, and an associate member of this year’s setting team.

The doubtful colophon is writ large on the left of the vestibule page. A colophon is a page describing the production of a book: this one states clearly enough, once you

get used to the font, that it comes at the end of “the golden legende” (see the Wimsey reference above) and that the printer “fynysshed it at Westmestre the twenty day of novembre the yere of our lord MCCCclxxxiiij & the fyrst yere of the reygne of Kyng Rycharde the thyrde”

Except that it doesn't quite. The 'l' and the first 'i' of the year number, the 't' of 'fyrst', and the 'y' of 'reygne' are all printed upside down. Further inspection shows more inverted letters earlier in the text.

An internet search will soon reveal that William Caxton printed an edition of the same book in 1483. It's possible to find online an image of his colophon: this one has no inverted letters. Or if you're more adept at inspecting html than at searching for rare texts, you might note that the vestibule image file is called 'colodhou.jpg', which itself has two letters inverted from the more likely 'colophon.jpg', a file you can find in the same directory. Careful comparison of the two versions reveals that the inverted letters spell out 'unreliability'. Which, as it happens, is a password used by Wimsey in the short story *The Adventurous Exploit of the Cave of Ali Baba*.

It's also the password you need to get into the library.

The Library Trail

The library page invites one to enter the title of whatever work one wishes to consult: if the work requested is found one is shown a page with a more or less apposite picture and a short description of the work. In those few cases where the full text is available online, there's a hyperlink to it. (There's no special significance in the wording around these links: we simply wanted to make clear that Logica does not promote breach of copyright.) And there's a “Search again” link which takes one back to the library page.

A keen observer will notice that the library page is not quite the same each time. There are six versions, differing in url and in the example “long titles”, which in order are:

- *The Considerable Logorrhoea of the Undisciplined Essayist*
- *The Liturgical Ordination of the Occidental Kabbalist*
- *The Ingenious Narrative of the Transvestite Orthodontist*
- *The Extraordinary Adventure of the Congenial Host*
- *The Banal Observation on Ontological Knowledge*
- *The Predictable Account of Genteel Eccentricity*

Where the capital letters of the changing words in the title spell out “clue: look into each book page”.

Another feature of the library page is a slightly odd-looking white gap between paragraphs. Copying and pasting the text, or simply Select All, reveals white text reading “One of the prizes is for a bonus hunt to be found in this very library. Start with the first novel.”

The first Sayers/Wimsey novel is *Whose Body?* Its library page contains further white text “Under cow picture.”

The second Wimsey novel is *Clouds of Witness* (“CoW” for short). Inspection of the html source of its page reveals the text “short link”, with the picture plonked on top of it.

The third Wimsey novel is *Unnatural Death*. Its html source includes a hyperlink with no text

anchor, linking to “extraneous/remark”. (The forward slash is intended to have no special significance, it just looks more like a link that way.)

The fourth Wimsey novel is *The Unpleasantness at the Bellona Club*. Its html contains a comment “concealed in some form”.

The fifth Wimsey novel is *Strong Poison*. Its html contains a hidden form with the value “a rose by any other name”.

The sixth Wimsey novel is *Five Red Herrings*. Its html contains three named table elements, with names “read” “the” “map”.

The seventh Wimsey novel is *Have His Carcase*. Its source contains an html map, with coordinates 110,111,116,101,116,69,88,116. Ostensibly these are Cartesian pairs, but they should be “read” as ASCII characters, giving “note tEXt”.

The eighth Wimsey novel is *Murder Must Advertise*. There’s nothing hidden in the html for this one, but the image files from here on are in PNG rather than JPG format. PNG is a full-colour format using lossless compression, which is convenient for our purposes. PNG files are made up of “chunks” of information, each with a four-character type name. The case of each character of the name gives information about the nature of the chunk: the capitalization of a text chunk is typically “tEXt”, as above. (It indicates that the chunk is non-critical, public, and can be safely copied.) The innards of bus.png from the *Murder Must Advertise* page can be inspected using your choice of editor to find a tEXt chunk with keyword “comment” and text “an encoded not encrypted note”.

The ninth Wimsey novel is *The Nine Tailors*. The bell.png image file contains a tEXt chunk with the comment “24eevLkQadyDpoyoNmHn0QcsuRBi09OYAA”. The general form of this might well be recognized by solvers who’ve been scanning the ath.js file in which the encrypted library pages are held. This text is encoded in the same way – from seven-bit ASCII into one of 64 characters – but not encrypted – no password is required. It can be decoded using the javascript functions called by the library page, if one is sufficiently adept at such things. The decoded version reads “masked in the last red bits”.

The tenth Wimsey novel is *Gaudy Night*. The hidden message here is in the image itself – each pixel of the uncompressed image contains three bytes of data, one for each of red, blue, and green. The least significant bit of the red bytes has been used to represent an additional, monochrome, image. One can devise one’s own software to extract this: it reads “encrypted mask”.

The eleventh Wimsey novel, and the last completed by Sayers, is *Busman’s Honeymoon*. A message is hidden in the picture in the same way; it reads “O/Rf/e9zG5B/ibYxlrIrgT8HwSNZ2PNMm/sXBQzBXW4oGLaNZxHInc04VUloW7mhGE5gRFdWH1paah86oMyLybBWuJGIKKBsEQfgBc8uW4z9Gss47BLteqD+ZaeBD/HkH/wqNugcln7Q2DJXeK4Gmi3U2NzeToI7Bt0VZ+yC”. This one really is encrypted: to find the password one needs to re-examine the hidden messages found so far:

Under cow picture
sort link
extraneous remark
concealed in some form
a rose by any other name
read the map
note tEXt

an encoded not encrypted note
masked in the last red bits
encrypted mask

The initial letters give “Use car name”. Wimsey’s car is named by him “Mrs Merdle”, after a Dickens character. Using that in carefully crafted javascript as the keyword for the encryption scheme used in the library, reveals plaintext:

Ask for Open Sesame in the library.

You will need the first names of six Sayers characters, in the forms in which they are commonly used.

The library contains an entry for “Open Sesame”, which is the keyword used by Wimsey for his voice-activated safe in *The Adventurous Exploit of the Cave of Ali Baba*. It shows you a page similar to the poster, but with the request “Please enter below the password given to authorized visitors. Three letters of each word will suffice.”

The six Sayers characters are the ones suggested in the main document by pictures of people sharing their surnames: Dorothy Parker for Charles Parker, a policeman, Charles Vane for Harriet Vane, Oliver Hardy for Sally Hardy, a journalist, John Arbuthnot for Freddy Arbuthnot, a gentleman, Billy Bunter for Mervyn Bunter, a manservant, and St. George (and some gherkins) for Gerry St. George, a nephew. The password is “charlesharrietsallyfreddymervyngerry” or alternatively “chaharsal-fremerger”.

The correct password takes you to a final page, also resembling the poster somewhat, but this time telling you:

Congratulations, you've reached the end of the library trail. To claim the recognition which is rightfully yours, please send an email to ath-sesame@ntlworld.com.

This final page has two new images. One is the statue of Dorothy Sayers with her cat, found roughly opposite the Witham library. The other portrays an additional 88 changes of double helix differential major.

We’ve uploaded html and spreadsheet tools to allow you to follow this trail without having to do your own programming.

The Library Catalogue

The (hitherto unpublished) library catalogue contains 29 entries. The order in which they appear in the ath.js file is not intended to be significant, but roughly reflects the order in which we created them. They are:

Uncle Meleager’s Will
The Nine Tailors
Commedia
Whose Body?
Clouds of Witness
Unnatural Death
The Unpleasantness at the Bellona Club
Strong Poison
Five Red Herrings

Have His Carcase
Murder Must Advertise
Gaudy Night
Busman's Honeymoon
A Matter of Taste
The Cave of Ali Baba
The Dragon's Head
Absolutely Elsewhere
The Man with no Face
Open Sesame
Ulysses
The Bone of Contention
The Cat in the Bag
The Article in Question
The Man with Copper Fingers
The Footsteps that Ran
The Practical Joker
The Stolen Stomach
The Necklace of Pearls
The Image in the Mirror

The descriptions of the books in the library are mainly self-explanatory, but we mention below a few clues and cross-references we included. There was no significance to our omission of a half dozen Wimsey stories, nor in whether we included the full title of a short story or merely its key words.

The 30th entry that seems to appear in `ath.js` is in fact the password used at the end of the library trail.

The following alternative names are supported: ("The Bellona Club", "Bellona Club", "Divina Commedia", "The Comedy", "The Divine Comedy").

Notes on Library Entries

Our intention was to provide solvers with the relevant details of the plots of Wimsey novels, lest they be unable to access the printed text. We then hid this in a forest of additional information.

Uncle Meleager's Will Gives the crossword grid, and explains how it reveals a hiding place.

The Nine Tailors. Gives the "I'm all for a treasure-hunt" quote, outlines how the bell-ringing code works, and mentions "imbrangled".

Whose Body? Emphasizes the importance of the *Golden Legend*, albeit having got this far you may not care any more.

Commedia. Mentions Eco's admiration of Sayers' translation, points you to an online source of various versions including Longfellow's, and reminds you of the poem's construction from tercets.

Clouds of Witness. The joke we quoted is perhaps not at all obvious out of its original context, in which the maid's memory seems to be improved by Wimsey's hint that the letter he's looking for is

of great value to him.

The Unpleasantness at the Bellona Club. Some solvers sought meaning in our replacement of the name of the murderer with a long dash. This was done simply to avoid spoiling the story for new readers.

Five Red Herrings. Points out the importance of railway timetables and suggests that one of the six possible locations in the red herring pages is the correct one.

Have His Carcase. Gives a hint on deciphering playfair letters, and mentions the character Antoine.

Murder Must Advertise. Mentions the pseudonym “Death Bredon” and gives a hint to the Smiths code.

The Cave of Ali Baba. Mentions, albeit too late, that this story is a possible source for a password.

The Dragon’s Head. Explains, again too late, the business with the dragon.

Absolutely Elsewhere. Hints at the reason why we included the *Absolutely Elsewhere* image in the main hunt – in Wimsey’s experience, absolutely elsewhere is in fact in the library.

Open Sesame. Not a book: see the notes on the library trail.

Ulysses. Hints at the importance of crosswords, and mentions that the book is ‘unread’ by many. To the Joycean mind, this surely implies that it’s ‘unread’ also – not part of a red herring.

The Bone of Contention. The key plot point in this story is that the body is stowed above ground. Just like our treasure.

The Cat in the Bag. No special significance to solvers, but House fans will like the picture.

The Article in Question. The picture is of Dame Edna, a.k.a. Barry Humphries who features in question 3b in the Red Herrings section. She is portrayed giving away her true gender, as detected by our hero the superb French speaker, “the **font** of all wisdom.” This is a clue to the text **font** used in the picture, which is “SuperFrench.”

The dot code tells us that “the article in question is in accordance with the Ashendene Press edition”. The slightly incongruous “Lo!” at the start of the text here is a hint that it’s Ashendene’s use of “Lo” in “Lo Inferno” that’s relevant.

The Man with Copper Fingers. We confess to carelessness here with the article in question. The corpse Wimsey buries is not that of the person whose death Wimsey causes, so “the body” should have read “a body” in our text.

The Stolen Stomach. This was the source of the “pink sisket” quotation in the Red Herrings front page. Where would one find “a treasure-hunter masquerading as a fisherman” save when seeking red herrings? Perhaps a very slight hint that the platform in the directions to the treasure site was a fishing platform.

The Image in the Mirror. Mirror images can indeed be confusing – see how many failed to notice that the red herrings were reflected in the SOURCE and S0URCE files. The picture of the baby, and

the discreet autobiographical whiff pertained to the passage where she describes a baby being fostered, as happened to her own child.

The Footsteps that Ran. The text mentions that there may be some musical clues elsewhere. This is a pointer to the Red Herrings pages.

The unprincipled affair of the practical joker. The picture of the fool was the same as that used by Pablo in the 2007 hunt. We introduced several parallels between the Holmes and Wimsey stories here. One linked *The Piscatorial Farce* with *The Adventure of the Blue Carbuncle*. Another pointed to *The Adventure of the Golden Pince-Nez* (red herring Q1b). We gave a hint to the link between 221b Baker St and 110a Piccadilly (red herring Q1a)

The necklace of pearls. The picture shows Harriet Vane, as portrayed by Constance Cummings, wearing a pearl necklace in the film version of *Busman's Honeymoon*. The text has a mildly thematic use of the phrase "pins the blame", hinting at the importance of the pearls pinned to the mistletoe in the story.

Appendix 1 – The Crossword Answers

Across Clues

I.1 She may sell others, whichever way

Madam (the answer can be read forwards or backwards)

XI.1 Armour provided at site of explosion

Fauld (a type of armour, and the site of the largest explosion in the UK in 1944)

I.2 Incongruous and possibly ferrous

Ironic (double definition)

X.2 Mr Baggins has a town in Spain

Bilbo Baggins plus “a” gives Balbao

I.3 Joe's judo kit

GI Joe; a gi is what is worn for judo

XIV.3 Nominal pressure to provide IOU

PN (promissory note) or Pressure Nominal

I.4 Fast car uses Uranium fuel perhaps

Hotrod, or hot rod

X.4 First half of legacy lining milk-pail

Leglin (a milk-pail made up of the first halves of legacy and lining)

I.5 Farewell to Rio - caught adrift, not good

Tchau (Brazilian good-bye, an anagram of caught without the g)

XI.5 Exmoor heroine embraces Doctor Livingstone

(Lorna) Doone is the beginning and end of “*Doctorlivingstone*”

II.6 The excited and agitated

Het (3-letter anagram)

VII.6 Infection losing a title Harriet disdained

MRSA is the “hospital superbug”; without an A we get Mrs which is the title Harriet Vane originally refused.

XII.6 Finish the same ribbon

Tie (double definition)

VI.7 Dowager's beauty found in the lengthy Euripides play

Helen – a beauty hidden in “*thelengthy*”, a Euripides play, and also LPW’s sister-in-law, the Duchess. Describing her as the “Dowager” was a careless error on our part.

I.8 Cameron is another famous old one, but strangely a tin one

Etonian (anagram of a tin one); David Cameron is one famous Old Etonian and LPW another.

IX.8 Can't decide? Go smoking round Britain

Whiffle – a reference to the advertising campaign “Whiffle round Britain” in *Murder Must Advertise*

VI.9 The second note of the scale – Re – and a Bus, giving a rebus for rebus.

II.10 I hid Frank from hip-hop band with a pulse

Bep Vorskuijl hid Anne Frank; Black-Eyed-Peas are a hip-hop band named after a pulse

VII.10 Month abbreviated in inverse proportion

Sep (hidden word)

XII.10 Vehicle without a screen that's no longer popular

Cart losing ‘a’ gives CRT

I.11 '68 whiskey comes back about the same

The ’68 Whiskeys are a medical division; medic is ‘c’ (about) and ‘idem’ (the same)

XI.11 Thus, no pressure initially to back doleful deity

So no P backwards to give Ponos, the Greek god of sorrow.

I.12 Hush! Thy tremble beats, beats with the blues!

Rhythm – Hush Thy Tremble is an anagram of Rhythm The Blues

X.12 No pupil in region surrounding pupil

OL in Area gives Areola, the region surrounding the pupil of the eye

I.13 Sound purchase goes both ways

Bi (sounds like Buy)

XIV.13 Forgets the start and end of dance - what a drip!

Jive without the first and last letters to give IV

I.14 One Italian girl carries root back to Australian park

Una (feminine for one in Italian) carries Rad backwards to give Undara, an Australian park

X.14 Gracefully spread cards in game

Ecarte (double definition)

I.15 Offshoot of humane society and artistic section

National Disaster Animal Response Team (N-DART) is part of The Humane Society of the United States; and a section of *andartistic*

XI.15 Small fish moves lever

Elver (anagram)

I.I Power may...

Might (double definition)

I.II I fought Sodomites with fiery chariot endlessly

Arioch fought the Sodomites and is an anagram of chariot without its last letter

I.III Make a note

Do (double definition)

I.IV Hindu chant raised in Iranian town

Anarat is an Iranian town and is Tarana backwards

I.V Snowy, originally, released in May in 1990

Milou (the original French for Tintin's companion); *Milou en Mai* is a film released in 1990

I.VIII Peter Wimsey, before becoming 1st Duke

Peter Wimsey (d. 1499), the 6th Earl of Denver, was promoted to 1st Duke of Denver

I.XI Crumpled field report is set alight with petrol

Fired – field report is an anagram of Petrol Fired

I.XII I gloat about French dish

Aligot (a rather nice French dish of melted cheese; an anagram)

I.XIII Serbian river found in Southall?

Ub (the Southall postcodes start UB)

I.XIV Rabbit talking in Oregon

Lapine is a town in Oregon and the language of rabbits in *Watership Down*

I.XV Lord's favourite called over

Donne, who was a great favourite of LPW and whose name is pronounced “done”

2.VI "A hundred and one Dalmatians" began bloodhounds

CID - CI is 101 in Roman numerals plus the beginning of Dalmatians

2.X A sound measure of a sound tailor

Bel is a measure of sound, and sounds like Bell, referred to as a ‘tailor’ – c.f. *The Nine Tailors*.

6.VII An Egyptian pharaoh is only worth half a king of Athens

Menes, whose name is the first half of Menestheus

6.IX Complete the three points arising

SEW (three points of the compass) plus UP

7.VI It's mostly difficult to find Hebrew mountain

Har(d)

7.X Despite unnatural death, Dr Carr may have worked here after 1948

NHS: Edward Carr is a GP featured in the DLS novel *Unnatural Death*; he would have been working for the NHS after its foundation in 1948

9.VIII Unpleasantness of no label at the club

Bellona (anagram of No Label and a reference to the DLS novel)

10.II Pretence of stag in drag: lagged?

Be + Hind

10.IV Half of Christian's island has a right to transport to the head

Pitcar: The first half of Pitcairn (*Mutiny on the Bounty*) + AR gives transport to the head of a mine

10.XII Contemporary of Seb and actor between Michael and George

Coeval: Seb Coe plus Val Kilmer, the middle Batman

10.XIV Explosive to set fire to, we hear

Tolite, a form of explosive which sounds like To Light

11.I On the cards, baker kneaded number missing last piece of cake

Mr Bun (the baker in happy families, an anagram of number without 'e')

11.V Right after tea or clean before tea; leader shows the way

Chart: Cha+rt, or char + leader of 'tea'

11.XI Katie, Vincent or right?

Price (triple definition)

11.XV Investor of sound taste

Saver (sounds like Savour)

12.VI 100 Drachmas ends alarm in Sparta

Mna (last letter of the final three words)

12.X Cut to the centre of one of life's certainties

Axe, in the centre of taxes.

14.III Woven silk unmasked by knife

Damask without the mask gives Da, a type of knife

14.XIII Take five in rewrite of James' book

R is crosswordese for take (*recipe* in Latin), V the Roman numeral for five, giving the Revised Version or RV of the King James' bible. Alludes to the *Take Five* music in the Red Herrings.

Appendix 2 – A Short Touch

The strips on the left of the quiz document illustrate the "Short Touch of Kent Treble Bob Major" described in the chapter heading in *The Nine Tailors*. This takes 704 changes, 8×88 (how convenient for the setters!). It involves a few variations to the regular changes for KTBM.

Long explanation

In KTBM the treble follows a 32-change pattern (going first to last then last to first, "bobbing" so that it visits each position twice, hence "treble bob"). The other bells all follow a more complicated pattern, the same one for each of them (because if they followed the same pattern as the treble, a change would be repeated as they bobbed) involving a stretch of "slow hunt" as they get stuck in first and second place by those '34' changes. Each 32-change treble cycle changes a bell order 1abcdefg to 1caebgdf. So the positions of the tenor (8th bell) at the end of the 32-change treble cycles in the plain course are 6th, 4th, 2nd, 3rd, 5th, 7th, 8th. The positions of the 7th bell at the end of the cycles are 8th, 6th, 4th, 2nd, 3rd, 5th, 7th, and so on. So there are seven 32-change treble cycles before everything repeats, $7 \times 32 = 224$.

However, these strips are illustrating the "Short Touch of Kent Treble Bob Major", which specifies "call her in the middle with a double..."

Here's some nomenclature:

Plain course - the regular course of a method.

Call - a variation from the usual plain course, taking effect (in KTB) on the last change of the treble's cycle, and hence altering the position of the bells for the beginning of the next cycle

Bob - a change of direction, either as in the plain course or as the result of a call. For KTBM the change when a bob is called is deemed to be '14'.

Composition - a prescribed series of calls resulting in a cycle of permutations different from the plain course of a method

Observation bell - the bell whose movements are observed in describing a composition

Middle - 6th place in the ringing order [yes, we know]. Calls are specified according to the position of the observation bell that results. So if the 8th bell would have gone from 5th to 4th place (with change '18') but now goes from 5th to 6th place (with change '14') that's "in the middle".

Wrong - 7th place in the ringing order

Home - 8th place in the ringing order

Before - 3rd place in the ringing order (coming out of the slow hunt).

With a double - do the same call again at the next opportunity.

Usually in KTBM compositions, bobs are called only in the four tenor positions defined above.

This is because those four have the same effect on the 7th bell as the tenor, in one special sense, which is that a call before has no effect on the 7th nor on the tenor, whereas the other three calls cause both the 7th and the tenor to go back to the positions in which they started the current treble cycle.

So "call her in the middle with a double, before, wrong, and home" specifies five calls, four of which add 32 changes to the touch. Hence it causes the 7th and 8th bells to be in 7th and 8th place after $224 + 4 \times 32$ changes, = 352 changes. Then the pattern repeats and, as it happens, that gets all the bells back to their starting positions. So 704 it is.

The upshot is that '18' is replaced with '14' when the tenor would otherwise end a treble cycle in 4th place, which is after 64 changes. Then again 32 changes later. And three more times later on. And then the pattern repeats.

Appendix 3 – Website implementation

There's no good support for embedded fonts in html, so text in the ATH appears either as image files or using fonts available to the user's browser.

The business with the dragon on page three uses javascript and dynamic html (DHTML) to control animated GIFs. We got this working in Firefox without too much difficulty. With rather more difficulty, we found a (less elegant) way to make it work in IE also. We never got it to work in Safari, which steadfastly refused to change the cursor to a crosshair. (We had in mind to experiment on Chrome also, but never did.) In any case, we left the source code controlling the dragon very obvious at the top of p3.htm, and the link to library/vestibule obvious enough at the bottom of p3.htm, so if necessary you could get there manually.

All passwords are checked against their sha-1 hashes (a hashing algorithm converts an input string into one of a very large number of possible output strings, in a way which is not invertible). There are known weaknesses in sha-1 which suggest that it's somewhat less secure than it ought to be, nevertheless breaking it would at least require very considerable computational effort, and we judged it good enough for our purposes. We'll be interested to learn if anyone has succeeded with a brute force attack.

The hidden library and red-herring pages are encrypted and decrypted using a (symmetric key) stream cipher, with the key created by md5 hashing of the password entered.

The hashing and cipher functions were obtained on free licences and assembled in the file md5sha1.js.

The library directory naturally contains the colodhou.jpg image file used on the vestibule page. It also contains colophon.jpg, for your convenience in comparing them. However, the directory index is concealed by the use of an unhelpful index.htm file, so you would have had to guess to look for colophon.jpg before you could take advantage of it.

All the useful library files are in the "wemade" subdirectory. Naturally we chose an obscure name for it: the name is an abbreviated and spoonerized version of "Marion E Wade", whose research collection in Illinois inspired the library we made.

We needed a short url for the red herrings section, hence rh.htm. This redirects automatically into the aringherosso directory. Again, we needed a directory name no one would guess: this one is roughly the Italian for "red herrings", but we left "rosso" undeclined to make it more recognizable by Englishmen and less guessable by Italians.

Without making it too easy, we wanted most solvers to find the library and red herring pages. So we were relaxed when we discovered that Logica's server has a spelling correction feature for urls which made it possible to find the red herring pages by mistyping. We were also unconcerned about the possibility of dictionary attacks on the Vestibule password, or even the existence of online dictionaries of SHA-1 hashes. Future setters may wish to take note however.

We'd be happy to discuss the implementation further with any future setters who want to implement similar features.