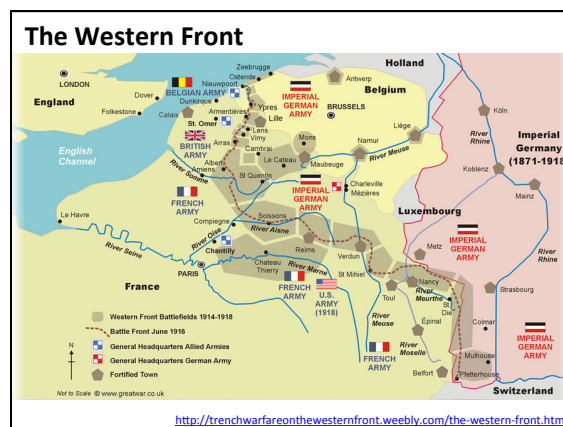


Using DNA to identify Soldiers of the Western Front

Dr Maurice Gleeson
BIFHSGO, Ottawa
11th Sep 2016




Killed in Action
- Men 1,067,426
- Women 800

Missing
338,955

www.everymanremembered.org

How many soldiers of the British Army do not have a known grave?

In March 2009, the totals from the Commonwealth War Graves Commission for the First World War are as follows. These figures include all three services:

Buried in named graves : 587989
No known graves, but listed on a memorial to the missing : 526816, of which
- buried but not identifiable by name : 187861
- therefore not buried at all : 338955

The last figure includes those lost at sea.

**30 per year
>1000 years**

So it is fair to say that about half are buried as known soldiers, with the rest either buried but unidentifiable or lost.

<http://www.longlongtrail.co.uk/army/some-british-army-statistics-of-the-great-war/>



Les corps de 19 soldats de la Grande Guerre retrouvés en Flandre occidentale

La cellule archéologique de l'intercommunale flamande COF a découvert ces derniers jours les restes de dix-neuf soldats de la Première Guerre mondiale à Langemark-Poelkapelle, alors qu'elle effectuait des fouilles pour le gestionnaire du réseau de gaz Fluys. D'après les premières informations, il y aurait au moins deux soldats allemands et dix britanniques. Après analyse, les corps seront restitués aux pays concernés afin qu'ils y trouvent une dernière demeure.

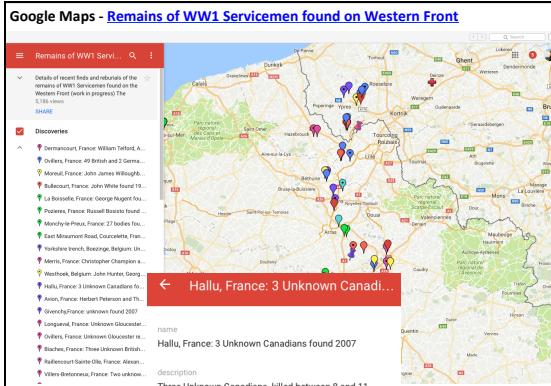
LA SEMAINE EN VIDEO ven. 15/04/2016 - 18:32

<http://derefactie.be/cm/vrtnieuws/francais/videotheque/1.2629921>
<http://1914-1918.invisionzone.com/forums/index.php?topic/238324-remains-of-19-soldiers-found/>

Soldiers recovered 30-60 per year

April 2016
19 recovered
2 German
9 Commonwealth (possibly Canadian)
2 identified so far

Google Maps - Remains of WW1 Servicemen found on Western Front



Hallu, France: 3 Unknown Canadian...

Three Unknown Canadians, killed between 8 and 11 September 1918, found April 2007 <http://www.canada.com/vancouversun/news/story.html?id=020a661b-171e-4b69-b9bc-76f2b3e9327e&k=94836>
ref: Vancouver Sun

Process for Managing Recovered Remains(?)

- Remains Found
- Local Police
 - Recent death / murder?
 - War remains?
 - Permission to recover?
- Recovery undertaken
 - Local army, Archaeologists, Original finder
 - Belgium: by police -> detailed report;
 - France: by CWGC's Exhumation Officer
- CWGC stores remains in their mortuary
 - also secures artefacts

<http://1914-1918.invisionzone.com/forums/index.php?topic/158933-recovery-of-found-remains/&page=2>
<http://www.westernfrontassociation.com/great-war-people/cemeteries/1027-work-spva-cwgc.html#sthash.CH53nTIV.dpbs>

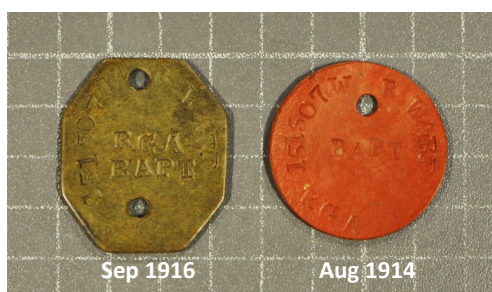
Process for Managing Recovered Remains(?)

- Identify Nationality?
 - => CWGC report to member government MoD
 - UK: JCCC
 - Germany: VdK
- JCCC co-ordinates efforts to identify
 - Nationality, Regiment, Individual
- If identified, family traced & funeral organised

<http://1914-1918.invisionzone.com/forums/index.php?topic/158933-recovery-of-found-remains/&page=2>
<http://www.westernfrontassociation.com/great-war-people/cemeteries/1027-work-spva-cwgc.html#sthash.CH53nTIV.dpbs>

Process for Identifying Remains

- Co-ordinated by Ministry of Defence (MOD)
 - Service Personnel & Veterans Agency (SPVA)
 - Joint Casualty & Compassionate Centre (JCCC)
 - Historic Casualty & Deceased Estates Casework team (HC & DE)
 - » 2-person team deals with historic casualties & war dead
- Recovery "Team"
 - Archaeologist? (CSI-like recovery)
 - Forensic anthropologist?
 - Height, battle wounds, distinguishing features
 - Military Historian?
 - Nationality? Regiment? Individual named soldier?



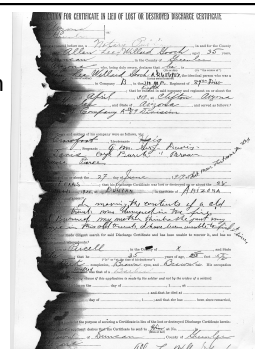
Process for Identifying Remains

- Initial identification (Nationality, Regiment)
 - Historical war records (troop movements)
 - Artefacts found with or near the remains
- If possible individual identified ...
 - DNA sample taken?
 - Apparently yes of April 2016 (1)
 - Genealogy & potential living relatives traced?
 - working with volunteer genealogists
 - Relatives contacted? (via genealogist?)
 - DNA from relatives
 - Identity confirmed

1. <http://1914-1918.invisionzone.com/forums/index.php?topic/237868-dna-samples-from-recovered-bodies/#comment-2440281>

War Records

- Canadian and Australian service files still exist
- British "burnt records"
- William Spencer, Principal Military Specialist, National Archives, UK
 - Most servicemen's whereabouts can be located given a name and date



<http://blog.nationalarchives.gov.uk/blog/author/wspencer/>

Issues & Concerns ... outdated?

- Insufficient efforts made to identify found remains
 - Recovery of remains
 - Farmers do not report them
 - Too much delay – inconvenience – loss of income
 - Remains ploughed over / bulldozed
 - Local laws and customs not clearly stated / understood
 - Are they observed / enforced?
 - Trophy Hunters
 - Incentives to report are potentially detrimental
 - Reluctance to publicise finds
 - Lack of transparency as to the exact process
 - DNA is not routinely recovered from remains prior to reburial

<http://1914-1918.invisionzone.com/forums/index.php?topic/158933-recovery-of-found-remains/#page-1>

<http://www.army.gov.au/Our-work/Uncovered-War-Casualties/Army/Fromelles/The-Fromelles-project>

<http://www.cwgc.org/news-events/news/fromelles-identification-board-to-reconvene.aspx>

<https://www.awm.gov.au/blog/2010/03/19/fromelles-identifying-the-fallen/>

Fromelles – 19 July 1916

- 5513 Australian & British casualties
- 1780 dead
 - Buried in mass graves
 - After war, transferred to purpose-built cemeteries
 - 250 missed
- Campaign by Lambiz Englezos
 - 250 found in May 2008 (203 Australian)

http://en.wikipedia.org/wiki/Battle_of_Fromelles
<http://news.bbc.co.uk/1/hi/magazine/8473444.stm>

Fromelles

- 1990's – unmarked mass grave discovered
 - 337 remains (estimate)
- 2009: 250 exhumed (173 Australian)
 - Deviation from protocol – DNA taken and stored
 - 144 / 250 identified
- 30 Jan 19 July 2010 – bodies reinterred in new Pheasant Wood Cemetery
- DNA samples taken
 - The £3m project, funded by the British and Australian governments, overseen by the Commonwealth War Graves Commission
 - [75 Australian soldiers identified](#) (now [124](#))
- Support from "All Party Parliamentary War Graves and Battlefield Heritage Group"

http://en.wikipedia.org/wiki/Battle_of_Fromelles
<http://news.bbc.co.uk/1/hi/magazine/8473444.stm>

Fromelles

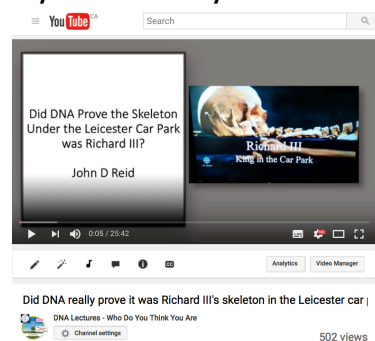
The Science behind the Story

<https://www.youtube.com/watch?v=dxE6d6b-IO4>

The ID Process at Fromelles

- 1780 died
 - 250 were among them
- Genealogies of all 1780 traced
 - Army of volunteer genealogists
- DNA donors identified for each family
 - Preferably 2x Y-DNA and 2x mtDNA
 - Potentially, 1780 x4 = >6000 samples = cost!
- Beware of NPE rate = 2%

Bayesian Probability Statistics



<https://www.youtube.com/watch?v=PZirr0FpsW0>

Future considerations

- Unknown soldier found
- Regiment identified
- All families of regiments daed traced and dna tested
- = cost!
- Narrow down via ...
 - Artefactual evidence
 - Haplogroup rare?
 - New proposed Dna enrichment strategy

Y-DNA - Matches

11 MARKERS - 3 MATCHES

Genetic Distance	Name	Y-DNA Haplotype	Terminal SNP	Match Date
0	Massy	YCNA12	R-4009	03/02/14
0	Simmons	YCNA12	R-4009	03/02/14
0	Massy	YCNA12	R-4009	03/02/14

The most likely candidate for the birth father would be a man named Simmons or Massy

myFTDNA

11 MARKERS - 3 MATCHES

Genetic Distance	Name	Y-DNA Haplotype	Terminal SNP	Match Date
0	Gleeson	YCNA11	R-4009	03/02/14
0	Gleeson Jr.	YCNA11	R-4009	03/02/14
0	Gleeson	YCNA11	R-4009	03/02/14

The most likely candidate for the birth father would be a man named Gleeson

LGC to lead the way in identifying fallen military personnel via DNA tests

22 MAY 2014

Tags: Biological, Forensic

LGC today announced that they have been awarded a two-year contract by the Ministry of Defence (MOD) to provide DNA Testing Services to assist with the identification of historic remains recovered from battlefields and aircraft crash sites.

The contract let on behalf of the Ministry of Defence Joint Casualty and Compassionate Centre (JCCC) will assist the work undertaken by the JCCC's Commemorations team in their efforts to positively identify the remains of British Service personnel recovered from battlefields, or other sites, arising from conflicts in the 20th Century.

Jeremy Cook, Managing Director of LGC's Laboratory and Managed Services division, said, "We are, naturally, delighted and honoured to play a key part in this important project. With almost 100 years' experience of forensic work, from crime scene to the courtroom, our formidable expertise and casework success has helped unravel the mystery of some of the UK's most publicised and intractable 'cold' cases. Our innovative work to identify the soldiers at Fromelles highlights our strength in projects such as this and we look forward to working with the JCCC to identify these historic remains."

LGC is an internationally-renowned provider of DNA testing services, as well as a full suite of forensic science services. This project follows LGC's ground-breaking work in identifying the remains of in excess of 120 World War One soldiers, who fell at the Battle of Fromelles in northern France on 19 July 1916.

The majority of the work performed under the contract, will take place at LGC's fully-accredited DNA laboratory in Teddington.

<https://www.lgcgroup.com/about-us/media-room/latest-news/2014/lgc-to-lead-the-way-in-identifying-fallen-military>

ysearch

Search for Genetic Matches

This function allows you to find matches or close matches to your own results. You may utilize this function by simply entering your User ID. You will be taken to a screen allowing you to specify your search parameters, including minimum number of matching markers, maximum number of genetic distance, genetic distance per marker and region. After entering your desired parameters, the database will provide you with any matches meeting your precise specifications.

Enter User ID: Search Attention: if you don't have a Ysearch ID please create one [here](#).

OR

[Click here](#) to enter any sequence and search by Haplotype.

Home Create a New User Search for Genetic Matches Search by Last Name Edit an Existing User Alphabetical List of Last Names

All Contents Copyright 2003 Ysearch.org and [Genology by Genetics Ltd.](#) and shall not be reproduced without written authorization

http://www.ysearch.org/search_start.asp?uid=

ysearch

First 19 markers from Gleason Lineage I entered into search function

3/13 (23%) = 0/19

http://www.ysearch.org/search_search.asp?uid=&freentry=true

ysearch

First 19 markers from Gleason Lineage I entered into search function
=> 9 Gleason matches in first 1000 = 0.9%

Compare	User ID	Pedigree	Last Name	Origin	Haplotype	Tested With	Markers Compared	Genetic Distance
<input type="checkbox"/>	JUNAA	Pearson managed by daughter Donna Purdy	New York, USA	R1b (tested)	Family Tree DNA	19	0	
<input type="checkbox"/>	NIST2	Fields	Kentucky, USA	Unknown	Family Tree DNA	19	0	
<input type="checkbox"/>	PMSTU	Gleason	Unknown	Unknown	Family Tree DNA	19	0	
<input type="checkbox"/>	XQJBE	Bane	Giles County, Virginia, USA	Unknown	Family Tree DNA	19	0	

Size of the database?

- Surname Count: 110566
- Unique Haplotypes: 130918
- Number of Records: 177574
- Family Tree DNA - 156423
- Relative Genetics - 1091
- Oxford Ancestors - 464
- Other - 19596

About The Family Tree DNA Database

Our databases are the most comprehensive in the field of Genetic Genealogy. As of August 30, 2016, the Family Tree DNA database has 811,995 records. Total numbers include transfers from the Genographic Project and resellers in Europe and Middle East. We also have:

6,855 SURNAME PROJECTS	433,550 unique surnames
579,947 Y-DNA records in the database	266,015 25-marker records in the database
245,029 37-marker records in the database	125,415 67-marker records in the database
232,048 mtDNA records in the database	82,681 FGS records in the database

<http://www.ysearch.org>
<https://www.familytreedna.com/why-ftdna.aspx>

Questions

- Is there a moral imperative to use new technology?
- Does this conflict with other considerations?
 - Privacy? Confidentiality?
 - Remains should be treated “with respect” – is the process of DNA extraction “disrespectful”?
- What next?

What can you do?

- Document the genealogy of your fallen relative
 - Identify (& anonymise) potential living descendants for DNA testing ... Y-DNA, mtDNA, atDNA
 - Put the genealogy online (with sources ... leave a paper trail for later independent verification)
- Leave a digital memorial for him
 - Include a link to his genealogy
 - Include DNA data if available
 - Include contact details

IWM LIVES OF THE FIRST WORLD WAR

We believe that each and every one of the 8 million who served during WW1 **deserves to be remembered.**

Join Imperial War Museums and help tell these Life Stories by adding your images, sharing their stories, find their records and adding known facts.

Sign Up Free

101,111 Members | [Log In](#)

Who will you Remember?

Together we can create Life Stories for more than 8 million men and women.

Search by surname and service #, e.g. "Tickle 135"

7,669,237 Life Stories Added	246,689 Remembered	1,242,862 Facts Added	3,889 Communities
Search	View latest	View most recent	Browse latest

<https://livesofthefirstworldwar.org>

PRIVATE M SPIERIN

Michael Spierin (1896-1916) was my second cousin twice removed. One of about 10 children, he was the son of Michael Edward Spierin and Mary ***mins, who moved from Dublin to Birkenhead sometime after 1911. The Spierin family go back to Limerick in the late 1600's and the family tree is online at <http://trees.ancestry.com/tree/5157101/family/pedigree> Michael died of wounds sustained by artillery fire in May 1916 and is buried in Bethune Town Cemetery - plot V. C. 22.

MAURICE GLEESON

Several of his relatives have been DNA tested.
 His Y-DNA relative is 587634 on YSearch
 His mtDNA relative is 123456 on MitoSearch
 His atDNA relative is T533776 on Gedmatch

<http://www.everymanremembered.org>

mito search

Create A New User | Edit An Existing User | Search For Genetic Matches | Search By Haplogroup | Research Tools | Statistics

A Free Public Service from FamilyTreeDNA | Need Help? | Forgot Password? | Disclaimer

Search for Genetic Matches

Search by Mutations

This function compares HVR1 mutations that you enter to the HVR1 mutations of every user in the database. Those users whose HVR1 mutations are similar to yours are displayed.

☐ tested only HVR1 ☒ tested HVR1 + HVR2

HVR1 Mutations	HVR2 Mutations
1. 16	1. 16
2. 16	2. 16
3. 16	3. 16
4. 16	4. 16
5. 16	5. 16
6. 16	6. 16
7. 16	7. 16
8. 16	8. 16
9. 16	9. 16
10. 16	10. 16
11. 16	11. 16
12. 16	12. 16
13. 16	13. 16
14. 16	14. 16
15. 16	15. 16

Please choose from the following search options:
☒ When comparing me to users that tested HVR2 as well, factor our HVR2 similarity into the comparison. (Default)
☐ Perform comparison based on HVR1 only. Display HVR2 results when available, but don't take anyone out based on HVR2 dissimilarity.
☐ Only compare me to users that tested both HVR1 and HVR2, factoring both into the comparison.

http://www.mitosearch.org/search_start.asp?uid=

GEDmatch

Tools for DNA and Genealogy Research

GEDmatch provides DNA and genealogical analysis tools for amateur and professional researchers and genealogists. Most tools are free, but we do provide some premium tools for users who wish to help support us with contributions. You will need to upload DNA and / or genealogical (GEDCOM) data to make use of the tools here. Registration requires your name, email and password. Click [HERE](#) to register.

Log In

Email Address:

Password:


Not Registered? Click [HERE](#)

Forgot your password or wish to change your password? Click [HERE](#)

Site policy: Click [HERE](#)

<https://www.gedmatch.com>

Web site and contents ©Copyright 2011-2016 by GEDmatch, Inc.



FAMILY TREE DNA HOME | PROJECT SEARCH | SIGN IN

About This Group
Y-DNA Results
mtDNA Results
Join Request
DNA FAQ

WW1 Missing-in-Action DNA Legacy Project - Goals

This project serves several chief objectives:

- 1) to serve as a "Legacy Project" so that those whose relatives are among the missing can leave a "genetic remembrance" to the service of their relative
- 2) to allow relatives of the missing to leave their DNA in a public database in case it may prove useful in the future for identification purposes - these relatives will share some of their DNA with these missing soldiers
- 3) to support the adoption into official policy of DNA testing when other methods of identification have failed

<https://www.familytreedna.com/public/WW1MissingLegacyProject/default.aspx>

