Commentary on Results

The use of DNA in Genealogy, and my use of it in the Warburton Surname Project, are described in **DNA and its Uses in Genealogy.** So far I have 30 Warburton DNA Results and these are discussed below. The first 23 results were from **DNA Heritage**, but they ceased operations in April 2011 and the project is now hosted by **Family Tree DNA**. This includes the transfer of **DNA Heritage** results and project members. The other results are from **Family Tree DNA**.

The **Family Tree DNA** test differs from the **DNA Heritage** test in that only includes 37 markers, whereas the **DNA Heritage** test included 43 markers. Furthermore only 32 markers are common to both tests. I believe that in most cases this will be sufficient to determine matches between individuals who took the different tests. It will however change the probabilities associated with the time to most recent common ancestors.

Each participant in the Warburton DNA Project receives his own results. He also has a personal page at **Family Tree DNA** where he can view his results, print certificates, and much else. As Project Administrator I see all the results and can access the personal pages of project members. I also maintain a project page at http://www.familytreedna.com/public/warburton/default.aspx including a table of all the results. This is similar to the **DNA Results Table** I maintain on my own website, though the latter also includes some interesting results from outside the project and is in PDF format to aid printing.

The Warburton Profiles

So far I have uncovered 17 different Warburton profiles, including my own. There is no chance of the owners of two different profiles sharing a common male ancestor in the last 750 years, or even 7500 years. Only four of the profiles have been encountered more than once. These profiles and the Warburton clans to which they relate are as follows:

1. My Warburton clan is **The Warburtons of Hale Barns**. My profile is matched with several others in different clans. My research into possible links is documented in **My Genetic Links**. I have also produced a **Phylogenetic Tree.** Both these can be accessed from my website. The haplotype of this clan is R1b1a2.

   The matched profiles are found in the following clans:

   a. **The Descendants of William Warburton of Ashton-Upon-Mersey**
   b. **The Descendants of John Warburton of Houghton**. This clan includes 2 identical results.
   c. **The Descendants of John Warburton of Ince**. This clan has yet to be investigated and published.
   d. **The Descendants of Hamlet Warburton of Warrington.**
   e. **The Warburtons of Pennsylvania (descendants of George Warburton and Mary Chantler).**
   f. **The Descendants of John Warburton of Warrington.**
   g. **The Percy Grey Warburton Family (**included in **Families).**

2. Two results are from **The Warburtons of Garryhinch.** This clan consists of the descendants of three brothers who were present in Ireland in the second half of the 17th century. The results come from descendants of two of the three brothers, so their common ancestor is 9 generations back. There were 4 mismatches over 43 markers (2 in the same multi-copy marker). The chances of 4 mismatches in so few generations is less than 3%, but we have the genealogical evidence of the link. This family claims kinship with the Warburtons of Arley, and although there is no contemporary evidence to corroborate this, the claim has at times been accepted by the family at Arley. Therefore it is possible that this profile is that of the Warburtons of Arley. It would take matches with subjects outside the Garryhinch clan to increase this possibility. The predicted haplotype of this profile is J2.

3. Three results are from **The Warburtons of Warburton**. Of these 2 match. Their common ancestor is William Warburton (1733-1822), who is 6 generations back from the participants. One of these participants is related to Norman Warburton, author of

Warburton: The Village and the Family, in which he also published his own tree back to the 16th century in Warburton village. The predicted haplotype is I1a -AS13 which is typical of the Anglo Saxons. The third result is a mismatch, and is haplotype R1b1a2. The identified common ancestor of all three participants is 8 generations back, and is the grandfather of William (1733-1822). The mismatch implies either an error in the tree, or the mismatched profile was introduced by an unrecorded non-paternal event in one of the 10 links from William (1733-1822), up to his grandfather, and down to the third participant. It is still not certain which profile is the original clan profile.

4. Four results originate in Lancashire. The predicted haplotype is R1b1a2: Two of these results are quite closely matched. These are a descendant of the **Warburtons of Radcliffe,** and a descendant of Peter Warburton (born circa 1809) of Turton, whose family has yet to be documented. There are two mismatches in a 43 marker test. The other two tests are 37 marker tests that have a large difference between them (8 mismatches), but are closer to the first two tests. One result is from a test on a descendant of Thomas Warburton (1775-1830) of Lancaster, another family not yet documented. Over the 32 common markers the closest result is 4 mismatches. The fourth result is from a someone believed to have origins in Haslingden, and a link by marriage to the **Warburtons of Radcliffe.** He is only 3 mismatches from each of the first two. Another key factor is that all share 4 allele values which are less common. These are DYD393 where they share a value of 23 which carries a 22% probability, DYS447 value 24 which has a 17% probability, DYS464d value 19 which has a 2% probability, and DYS442 value 13 which has a 12% probability. Multiplying just these 4 values gives a probability of any two people at random having all four values of under 0.01%.
5. There are three results that are known, or believed to have come from the descendant of an Illegitimate son who took his mother's name. These are:
    a. A result from **The Warburtons of Wilmslow** is from a descendant of John Charles Warburton born in 1808 in Wilmslow, Cheshire, the illegitimate son of Alice, the daughter on Peter Warburton and Alice Holt. It is not surprisingly unique. In due course traditional genealogical research may determine which clan Peter belongs to. The predicted haplotype is R1b1a2.
    b. One result is from a participant whose earliest known ancestor was born in 1820 in Stockport to a father named Josiah. This clan has not yet been documented. There is some evidence that this might come from an illegitimacy and father Josiah is a face saving white lie. The predicted haplotype is R1b1a2.
    c. One result is from a descendant of Frederic George Warburton born 1847 in Audley, Staffordshire. This clan has not yet been documented. There is some evidence that Frederic's mother was Julia Warburton (later Smith). The predicted haplotype is R1b1a2.
6. There are several unmatched results. These are:
    a. A result from **The Warburtons of Sandbach** relates to the family of Ralph Warburton who was born circa 1817 in Sandbach, Cheshire to a father named Joseph. The predicted haplotype is R1b1a2.
    b. A result from a participant in Australia whose earliest known ancestor was born in the Rochdale, Lancashire area circa 1770. This clan has not yet been documented. The predicted haplotype is R1b1a2.
    c. A result from **The Warburtons of West Virginia** is from a descendant of Thomas Warburton (1809-1866) who emigrated to the USA form Newark, Nottinghamshire. There is no earlier evidence of the family in Nottinghamshire, and they probably moved there to work in the coal mines. The predicted haplotype is R1b1a2.
    d. A result from a descendant of William Warburton, born 1797 in Audley, Staffordshire might have origins in Cheshire, but the clan has not yet been documented, or the links confirmed. The predicted haplotype is R1b1a2.
    e. A result from a family that has been traced back to William Warburton who was born in Liverpool around 1770. The family has not yet been documented. The predicted haplotype is R1b1a2.

f. A result from a descendant of Joseph Warburton (abt 1767-1844) who first appeared in Marple, Cheshire, and later lived in Torkington. Many of his descendants were colliers who lived in Poynton. All these villages are close to Stockport. The family has not yet been documented. The predicted haplotype is R1b1a2.

g. A result from **The Warburtons of Bowdon and Timperley** relates to a family who, like my own ancestors, have an association with Bowdon Parish dating back to before 1600. Current on-line haplotype predictors identify the haplotype as I2b1 Continental with a 69% chance of being Continental 1.

h. A result from the **Sharples Family** that is documented in **Families** and has been traced back to George (1826-1910) whose parents were Thomas and Ann nee Walsh. The predicted haplotype is I2a - Western.

i. A result from a **Quaker Family** documented in **Families** originates with Jacob Warburton who was born in 1782 in Bury, Lancashire. The predicted haplotype is G2a.

In addition I have a number of results which may be Warburtons. Two are matched with **The Warburtons of Hale Barns** and are discussed in **My Genetic Links.**

I was sent the profile of the Mongan family of Australia. They are believed to be descended from the brother of Charles Terence Mongan Warburton, the Bishop of Cloyne, who adopted the Warburton name in 1792 (see **The Mongan Warburtons** in **Warburton Clans**). The predicted haplotype is R1b.

I also have the profile of someone who has a family legend that that his ancestor was a Warburton who used his mother's maiden name to escape certain lady problems when emigrating to America. As yet this profile has no match so further genealogical research and/or a genetic match with a genuine Warburton are needed to confirm this. The predicted haplotype is I1a.

A non-paternity rate of 2% would mean that 50% of modern Warburtons have such an event in their ancestry. If there was a single original Warburton, then the other 50% of modern Warburtons should match. At the moment the largest group of matched profiles includes just over one third of the total profiles obtained. No other Warburton clans have been connected by a genetic link. It would seem that a large number of modern Warburtons do have a common ancestor, but it does not, at the moment, appear that he was the only original adopter of the name.

Warburton Haplotypes

Haplotypes define a small number of haplogroups, each with a distinct history. They are determined by a Single Nucleotide Polymorphism (SNP) test. Only one participant in the Warburton DNA Project has had a Y-chromosome SNP test, and that is me. It determined that my haplotype is R1b1b2. The designation of some of the haplotypes has changed over time so I am using the most recent designation.

Other haplotypes are predicted from the STR results and might therefore turn out to be wrong. However by comparing the STR results with near matches on the Ysearch, Ybase, and YHRD databases that have also been tested for SNPs, it is possible to have reasonable confidence in the predictions. Near matches with all the Warburton R1b profiles are tested as R1b1b2, though this is unsurprising since this is such a large group.

Stephen Oppenheimer, in **The Origins of the British**, uses STR results to further subdivide haplotypes, though he doesn't publish the actual numbers so you can categorise yourself. That's available as a chargeable service. Oppenheimer's subdivision of haplotype R1b includes a grouping which matches the Atlantic Modal Type (AMH). This is defined by the values for six of the markers in the STR test which are most common along the Atlantic seaboard. I conform to this exactly.

It should be noted that the underlying theme of Stephen Oppenheimer's book is that most British Y-chromosome lines have been present since the Stone Age, and later invasions, even that of the Anglo-Saxons, had relatively limited genetic impact. The Celtic 'invasion' he sees as merely a cultural migration. He hasn't identified any specific Norman markers that link back to Normandy, but suggests that due to intermarriage they may not be entirely Norwegian.

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I found some work by Dr Ken Nordtvedt that identifies typical STR profiles of various I haplotype sub-groups. For example there are some subgroups which are specific to the British Isles and others that are specific to the continent. There is a haplogroup predictor at http://members.bex.net/jtcullen515/haplotest.htm which will further predict the subgroup (subclade) of anyone in haplogroup I.

The various identified Warburton haplotypes have been present in Britain and areas of the near continent for thousands of years. Whilst they may be useful markers for tracking the impact of invasions or migrations they can tell us nothing of individual movements. For example who knows where a mercenary legionnaire in the Roman army may have chosen to retire to. Haplotypes bring an interesting story of ancient origins but have little to say about more recent genealogy. An individual I1a, J2, or R1b might have British, Viking, Saxon or Norman ancestry.

The following discussions of the origins of the Warburton haplotypes are primarily based on Oppenheimer and Nordtvedt. The various haplotypes are also discussed in some detail on Wikepedia, and at http://www.eupedia.com/europe/origins_haplogroups_europe.shtml, though the latter embodies a controversial theory on R1b (see below).

R1b

Traditionally members of the R1b haplogroup, are believed to be descendants of the first modern human migrants into Europe some 35-40,000 years ago. This is known as the Upper Palaeolithic migration and was characterised by the Aurignacian culture. During the last Ice Age they retreated to a number of refuges in southern Europe. The mutation that defines R1b occurred in the Iberian refuge. As the Ice Age retreated groups from the refuges began to repopulate Europe, though the process was interrupted by a fifteen hundred year cold period called the Younger Dryas. which ended 11,500 years ago.

Since 2010 two major scientific papers have been published. One of them (which seems to be the basis of the discussion on eupedia.com) published in January stated that ‘’perhaps R1b entered Europe from Asia more recently, perhaps in the Neolithic’’. The other published in May contradicted this and stated that perhaps "R1b, or at least the majority of it in Europe, dispersed from Iberia after the Last Glacial Maximum, after having come from western Asia”, in other words supporting the traditional view. Time will tell which of these theories gets the upper hand.

R1b1b2

R1b1b2 is a large subcategory of R1b. This covers 40-70% of the population of continental Western Europe rising to 82% in Ireland. There are some small sub-groups of R1b1b2, but the majority are not further delineated. Hopefully the future will produce defining mutations to further differentiate them.

The Atlantic Modal Haplotype

This is a sub-group of R1b1b2. The first post Ice Age settlers remained in Britain (which was attached to the continent at the time) during the Younger Dryas, but when a warmer climate returned a new wave moved north from the Iberian refuge. It was this wave that included the people identified by the AMH. The sub-group is still most common in the Basque country but it is frequent all along the coast of Western Europe including Western Britain and the Channel coasts. It is present to a lesser extent in Scandinavia.

I

Haplogroup I originated in the Trans-Caucasus and entered Europe before the last Ice Age. It is associated with the Upper Palaeolithic Gravettian culture. During the last Ice Age members of this haplogoup retreated to the Balkan and Ukrainian refuges. Here a number of sub groups evolved.

Because R1b is so common throughout Western Europe, it is the subgroups of the I haplotypes that are most commonly used as a marker for various continental invasions, including from Norway the original home of the Normans. Modern day similarities between the incidence of various haplotype I sub groups in Britain and in Scandinavia and Germany have been cited as evidence of recent invasions of Viking and Anglo-Saxon elites. However although some intrusions can be identified, especially when I sub groups are further divided using STR analysis, the majority of the I haplogroup migration into Britain occurred in Neolithic, and pre-Neolithic times.

I1a - AS13

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The traditional view was that I1a evolved in the Balkan refuge, and following the Younger Dryas they migrated into North West Europe.

Oppenheimer defines seven sub-groups based on STRs with different concentrations in Northern Germany and Scandinavia. He is able to identify groups within Britain who arrived in Neolithic times (or earlier) as part of the original north-western migration of I1a, and groups that represent invasions of Vikings or Anglo-Saxons in historic times. It makes up about 11% of the British population, mainly in England and Scotland.

However recent research, including that of Ken Nordtvedt, suggests that I1 evolved much more recently in northern Europe, maybe 4-6,000 years ago, and therefore its origin during and before the last Ice Age is uncertain. I1a - AS13 is a subgroup that originates in Denmark or North Germany and therefore was introduced into Britain by the Anglo-Saxons.

The Warburton I1a - AS13 profile has just 5 mismatches from Nordtvedt's I1a -AS13 profile. This is the number of mismatches most typical of a common ancestor 700 years ago.

I2a -Western.

I2a is defined by a specific SNP mutation known as P37.2. Ken Nordtvedt has identified four sub-clades of i2a. That described as Western (also I2a1c1 on his most recent tree) is found mainly in north-western Germany, but there are appreciable numbers in the British Isles. The founder of the I2a-Western clade lived around 60-70 generations ago, if I have read Ken's chart correctly.

I2b1 - Cont 1.

A profile originally reported as I1c was judged to be I2b1-Cont (Continental) by the Haplotype Predictor with a 69% chance of being Continental 1. The area of its most dense presence is Northwest Germany and the Netherlands, then up into Denmark, and even Southern Sweden and Norway. A good number are also found in the British Isles, perhaps brought there by the Germanic and Scandinavian invader/immigrants in the historic era.

The Warburton 12b1 - Cont 1 profile is matched most closely with a continental profile that has its highest frequency in the Netherlands, northwest Germany, and Denmark. This covers the sources of both the Saxon and Danish Viking invasions. There are 7 mismatches, which is the average number of mismatches you would expect for a common ancestor 1000 years ago assuming 30 years per generation. The chances are still good of a common ancestor 1200 years ago (typical for the Danish invasion), but are less for a common ancestor 1500 years ago (typical for the Saxon invasion).

J2

J2 is the most predominant sub-group of the J haplotype in Europe. It may have originated in the Levant before the last Ice Age. After the ice retreated it spread into Europe along the Mediterranean, around Spain and to the British Isles where it is most common in Southern England and Central Scotland. It is considered to be a marker of the Neolithic expansion which brought farming to Europe. This began about 10,000 years ago but reached Britain only about 6,000 years ago.

The Warburton J2 profile has no close matches, though the nearest on Ysearch, with seven mismatches in 32 markers, has tested as J2a. The Warburton participant has possible links to Odard the Norman invader. J2 is absent from Norway, the original Norman homeland. In fact if you plot the journey of Odard's ancestors from Norway to Normandy, and then to north west England, where Odard and his family settled, and finally to Ireland, where the participants known ancestors lived, it is only in Normandy that there is any presence of the J2 haplotype. Therefore the most likely place the profile was picked up was through intermarriage or inter breeding during the 200 years sojourn in Normandy prior to the invasion of Britain. However while J2s may be rare in the Norse country an individual J2 may well have migrated, or been taken there, so it cannot be certain where it originated. Indeed matching J2 results are needed to discount a much more recent origin.

G2

G2 has its roots around the Caucasus and migrated to Europe 6-9,000 years ago from Anatolia with the wave of Neolithic farmers that moved across Europe at that time. Today they are most numerous in Southern Europe, particularly in mountainous areas. They are found in relatively low levels in Britain, with the largest concentration in Wales.

Commentary on Results

My Mitochondria

In the same way that the Y-chromosome can be used to identify paternal haplotypes, mitochondria can be used to identify maternal haplotypes. Unlike Y-chromosomes which are found only in males, we all have mitochondria, although the DNA is passed only down the female line.

Mitochondria are quite small sequences of DNA relative to a complete chromosome. They contain about 16,500 elements or bases. Two sections of "junk" DNA are used for phylogenetic purposes. These are labelled hyper variable segments 1 (HSV1) and 2 (HSV2). HSV1 looks at 4-500 bases starting at position 16001, and is the least volatile of the two sections. HSV2 is typically used to fine tune results from HSV1, and it was used to help classify the world's population into 36 haplogroups (also called clans), and link them in the currently accepted phylogenetic tree. Of the 36 world clans, seven account for about 95% of the population of Europe.

Mitochondrial DNA test results are presented in terms of differences from the Cambridge Reference Model (CRS). The CRS defines a member of haplotype H. Haplotype H is called Helena in Bryan Sykes' book, **The Seven Daughters of Eve**, and is the most common type in Europe. The use of girl's names for the clans derives from the fact that there must have been a single woman who first had this specific mutation, and from whom all modern bearers of that mutation are descended.

The **Oxford Ancestors** test that I had done looks at positions 1-400 in HSV1 and this is sufficient to classify a person in the existing tree. Just two differences from the CRS classify me in haplotype J or Jasmine. These are at positions 069 (actually 16069 but the 16000 is dropped for simplicity), and 126. I have one other mutation at 366 but this merely an extension of my Jasmine identity.

Jasmine is a complex haplotype with several defined sub-groups. The other six main haplogroups found in Europe are all believed to have existed, or derived from groups that existed in Europe before the last Ice Age. Jasmine, however originated in the Near Middle East (possibly the Caucasus) and only moved into Europe when Neolithic farmers began to move into Europe 10,000 years ago. In fact the presence of Jasmine in Europe, but in relatively small numbers (10% of the population) alongside the descendants of the earlier hunter-gatherer population of Europe answers an old historical argument. Did the gradual adoption of farming across Europe represent the migration of an idea, or the migration of farming peoples who replaced the indigenous population? The answer lies between the two. There was a migration of people, but they did not replace the existing population and the idea of farming spread into the indigenous population.

I found an interesting MSc paper (see www.utlib.ee/ekollekt/diss/mag/2004/b16664851/Serk.pdf) on the Jasmine haplotype by an Estonian called Piia Serk. This paper suggests that the haplotype originated much earlier than Bryan Sykes' book stated, maybe 25,000 years ago. It found the major Jasmine subtypes present in the Near East as well as Europe.

My additional #366 mutation was not found in the Near East, but was present in 7 samples in Eastern Europe (5 of them in Albania). The Oxford Ancestors database shows 6 Jasmines with the #366 mutation in the England, and 3 in the USA. Unfortunately the Oxford Ancestors database only allows exact searches so I cannot see how many people have the #366 mutation and something else. I was however contacted by a lady who originated in Scotland who has the #366 and #325 mutations, and she pointed me to a paper that identified 3 more #366, #325s mutations in Ireland. To complicate things even more there is a #366 mutation in the Helena clan.

There are two possible scenarios to explain the presence of the #366 mutation in Eastern Europe and the British Isles. Firstly the #366 mutation occurred soon after the Jasmines moved into Europe and so they are spread all across Europe. This would be confirmed if #366s mutations are found elsewhere in Europe. It is just possible there was a direct migration from Eastern Europe to the British Isles (the wife of a Roman legionnaire? – or is my imagination getting the better on me?).

The second explanation is that there was a second #366 mutation in the British Isles. The #366 mutation in the Helena clan does suggest that #366 may be a hot spot more liable to mutation than other locations.