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Case Study

Pinpointing the MURPHY Genetic Homeland

www.irishorigenes.com



A handwritten signature in black ink, appearing to read 'Tyrone Bowes'.

Dr Tyrone Bowes
16th October 2013

INTRODUCTION

A commercial ancestral Y chromosome DNA test will potentially provide one with the names of many hundreds of individuals with whom one shares a common male ancestor, but what often perplexes people is how one can match many individuals with different surnames? The answer is quite simple. Roughly 1,000 years ago one's direct medieval male ancestor, the first for example to call himself 'Murphy' was living in close proximity to others with whom he was related but who assumed other surnames like Creagh and O'Mahony. Given that 1,000 years have passed since paternally inherited surnames were adopted there will be many descendants of those individuals some of whom will today undergo commercial ancestral Y-DNA testing. Hence the surnames of one's medieval ancestor's neighbours will be revealed in today's Y-DNA test results.

In Ireland surnames can still be found concentrated in the area from which they originate or in the areas where ones ancestors first settled. In this manner one can examine the distribution of the surnames that appear in ones Y-DNA results and pinpoint a '**Paternal Ancestral Genetic Homeland.**' The paternal genetic homeland is the small area (usually within a 5 mile radius) where one's ancestors lived for hundreds if not thousands of years. It is the area where one's ancestors left their mark in the placenames of that area and in the DNA of its current inhabitants. Since modern science can pinpoint a paternal genetic homeland it can also be used to confirm it by DNA testing individuals from the pinpointed location.

Notes of caution!

1. In Ireland each of the estimated 1,500 distinct Clans have a single founding ancestor, that's an estimated 1,500 Adam's from whom anyone with Irish ancestry can trace direct descent. But science has demonstrated that only 50% of individuals with a particular Irish surname will be related to the surnames founding ancestor, the other 50% of people will have an association that has arisen as a result of what are called 'non-paternal events,' usually a result of adoptions or infidelity.
2. Often people are looking for their DNA results to trace back to a specific area. One must remember that the results reflect one's ancestor's neighbours from around 1,000 years ago. As a result if your recent Irish ancestors were originally 9th Century Viking raiders, 12th Century conquering Normans, or 16th Century Planters, your DNA results will reflect earlier English, Scottish, Welsh, and possibly Scandinavian origin. I have estimated that only 60% of those with Irish ancestry are related to the pre-Christian Celtic tribes of Ireland. One must approach this process with an open mind!

Interpreting the Y-DNA results

To identify a paternal ancestral genetic homeland one must first identify the surnames that appear as genetic matches. Results for test subject Murphy are shown in **Figure 1**.

Test Subject	haplogroup	67 marker matches							
		exact	-1	-2	-3	-4	-5	-6	-7
Murphy	R1b				Murphy(x23)		Cupp(x1)	Phillips(x6)1	Rhea/Ray(x2) Mahony(x1) Colbert(x1)

Figure 1: Surname matches to test subject Murphy as revealed by commercial ancestral Y-DNA testing. Each surname appears at the earliest point at which it occurs e.g. the first match to another Murphy occurs at 64/67 markers, but not all Murphys may match at that level. In brackets are the numbers of individuals with a particular surname that appear as a genetic match. Coloured font indicates the ethnicity associated with each surname; **Irish**, **English/Norman**, black font indicates multiple ethnicities. ¹5 of the 6 Phillips matches occur at the 12 marker level and the shared ancestry may be very distant and precede the appearance of surnames by hundreds of years.

How many Murphy Clans?

Upon commercial ancestral Y-DNA testing Mr Murphy matched others called Murphy who tested independently of him indicating that he is among the 50% of male Murphys who after an estimated 1,000 years (since paternally inherited surnames first appeared) are directly descended from a Murphy-Adam (the first to take that surname), see **Figure 1**. However, Murphy is the most common surname in Ireland which indicates that there were potentially many ‘Murphy’ Clans, each founded by a distinct (unrelated) ‘Murphy-Adam,’ one of whom was Mr Murphy’s founding ancestor. Mr Murphy’s paternal ancestral link with Ireland is further confirmed by his genetic matches to surnames originating in Ireland including Rea/Rhea (both spelling variations of Creagh) and Mahony, or to surnames associated with Norman settlement in Ireland including Phillips and Colbert, see **Figure 1**.

Surname distribution mapping demonstrates that in 1911 the Murphy surname was found within every Irish County, being particularly common in the southwest, far west, southeast, and northeast, see **Figure 2**. By plotting where farmers called Murphy occur throughout Ireland it reveals at least 17 major farming clusters, see **Figure 2**. Each of these clusters may represent a unique Murphy Clan that arose in that location, and surrounded by neighbouring Clans some of whom they shared ancestry with. This means for example that Armagh-Murphys will have DNA matches to people with surnames like McCreech and McCone; surnames that are associated with County Armagh. While Cork-Murphys will have DNA matches to McCarthys and Sullivans; surnames associated with the southwest. In this manner Mr Murphy’s genetically occurring surname matches can reveal which Murphy Clan he is descended from and where his paternal ancestral genetic homeland is situated. Surname distribution mapping reveals that Mr Murphy’s surname matches as revealed by the Y-DNA test results are all associated with County Cork in the Irish

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southwest and that his paternal ancestral genetic homeland is located somewhere within that County, see **Figure 3**.

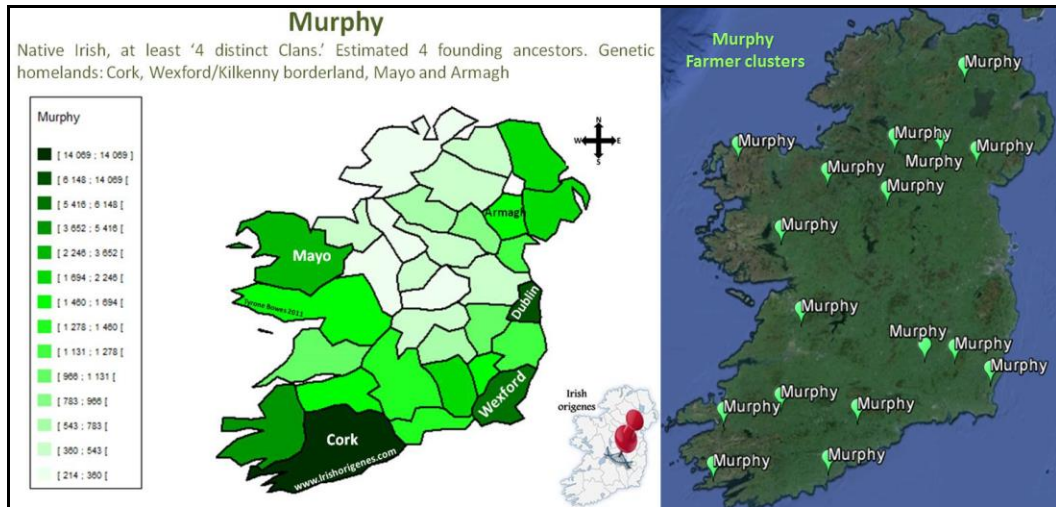


Figure 2: Distribution of the Murphy surname throughout Ireland. Surname distribution mapping (left panel) reveals that the Murphy surname is associated with 4 main geographical areas. A closer inspection of where farmers called Murphy lived in 1911 reveals at least 17 distinct clusters of Murphy Farmers (right panel).

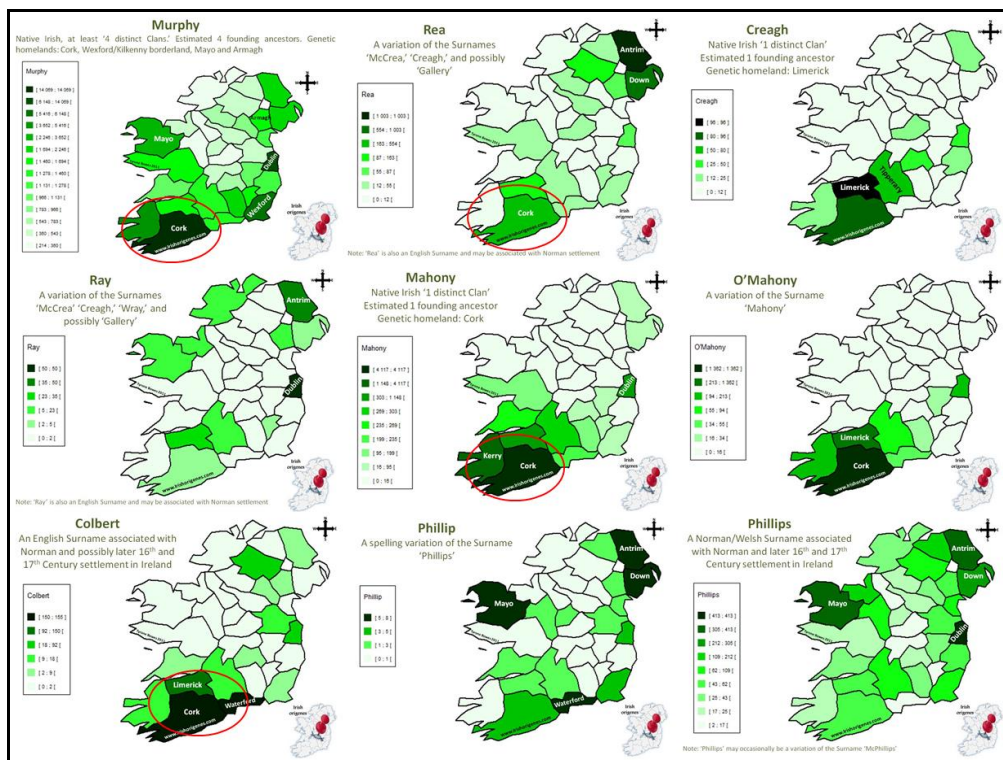


Figure 3: Mr Murphy's closest genetically occurring surname matches reveal a paternal ancestral link with County Cork. Surname distribution mapping of the surnames Murphy, O'Mahony, Creagh, Colbert, Phillips and their variants within Ireland reveals that they are all associated with County Cork (Red circle). O'Mahony, Colbert, and Creagh are almost exclusive to the Irish southwest where Murphy is particularly prevalent. Individual maps are taken from the Irish Origenes surnames database. There are no people called Cupp in Ireland in 1911.

The Murphys of County Cork

The area where farmers with the surnames Murphy, Creagh/Rea, O'Mahony, Phillip, and Colbert cluster together in closest proximity within Cork will be where the test subjects founding Murphy ancestor lived an estimated 1000 years ago when paternally inherited surnames became common. In 1911 there were 774 farmers (Catholic, heads of household) called Murphy recorded in County Cork, these were found in four distinct clusters, see **Figure 4**. The Mahony/O'Mahony surname is also very common throughout Cork (over 300 Catholic heads of household) and farmers with this surname are particularly prevalent in the west of the County. In contrast both Colbert and Rea farmers are relatively rare and found in east Cork close to the borders of Waterford and Limerick respectively. Between the Colbert and Rae farmers one finds a cluster of Murphy farmers, see **Figure 4**.

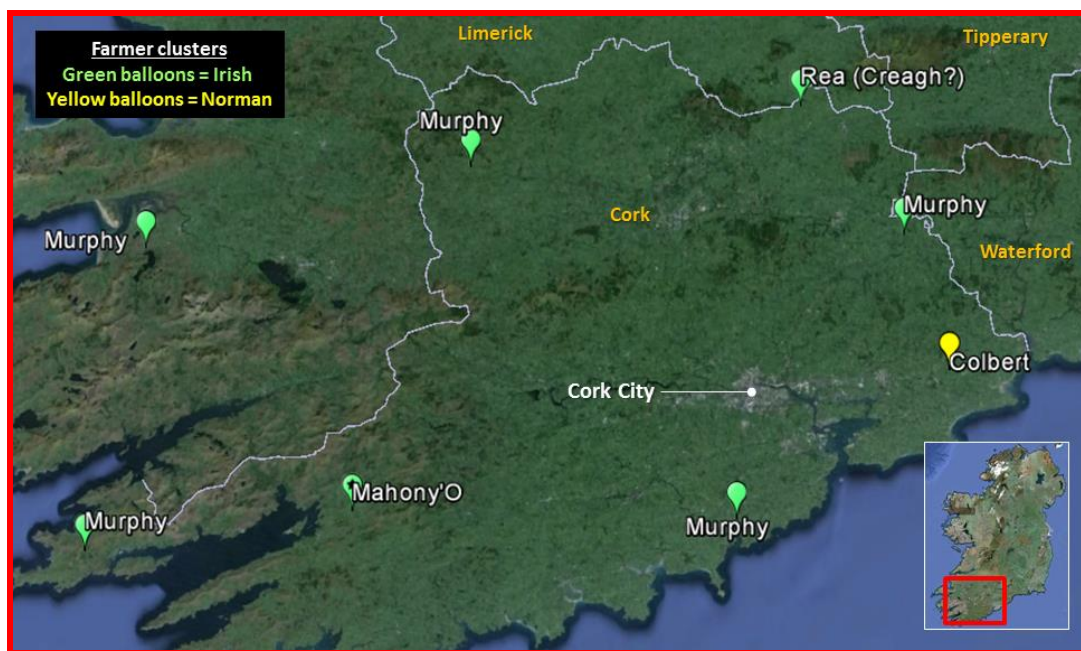


Figure 4: Mr Murphy's closest most frequent recurring surname matches cluster in east County Cork in southern Ireland. Pins have been placed in the areas where the highest concentration of farmers (male heads of household) with each surname lived in 1911. There are four major clusters of Murphy farmers found throughout Cork which is Ireland largest County. In eastern Cork close to the Waterford border one finds a cluster of Murphy farmers surrounded by Reas and Colberts. There are no farmers called Phillip or Cupp in Cork in 1911.

The Medieval Clan Territories of Ireland

The Irish Origenes Medieval Clan Territories of Ireland Map was reconstructed based on the location of castles and their known historical association to a particular Clan or Family. Over 400 of the most prominent Clans and Families are detailed and typically one's Y-DNA results will reveal shared ancestry to one or more of the prominent Irish Clans and/or Norman Families that dominated one's genetic homeland. County Cork was dominated by Gaelic Irish Clans in the west and by prominent Norman families in the east, see **Figure 5**. This mix of Gael and Gall (the Irish word for the Normans meaning 'foreigner') is reflected in the test subjects DNA

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results where one sees a mix of Irish (O'Mahony and Creagh) and Norman (Colbert and Phillips) surnames, this mix of genetic matches often reflects non-paternal events like adoptions and infidelities that have occurred between Irish and Normans who have lived in close proximity to one another for over 800 years. The test subjects Murphy ancestors lived in what would have been territory controlled by the Fitzgeralds (one of Ireland's most famous Norman families). The prominent Gaelic Irish neighbours of the Fitzgeralds in Cork included the Creaghs and the O'Mahonys, see **Figure 5**.



Figure 5: The Clan Territories of Southern Ireland. Mr Murphy's ancestors lived (red arrow) in an area that formed part of the extensive territory of the Norman Fitzgeralds (known as the Earls of Desmond). It was a territory that bordered the old Gaelic Irish world controlled by clans like the Creaghs (light blue arrow) and the O'Mahonys (dark blue arrows) who both appear as genetic matches to Mr Murphy.

Mr Murphy's Paternal Ancestral Genetic Homeland

Mr Murphy's paternal ancestral genetic homeland lies just north of the village of Conna in east Cork close to the Tipperary and Waterford border, see **Figure 6**. It is in this area that the test subjects Murphy-Adam lived an estimated 1000 years ago. His Murphy Adam lived surrounded by relatives who picked surnames like Creagh, and it is also the area where his distant Murphy relatives still live and farm. His Murphy ancestors lived in close proximity to the O'Mahonys and Colberts who appear as genetic matches which most likely arose as a result of non-paternal events that occurred between these Clans and Families who have been neighbours for many centuries.

Evidence of one's ancestor's long association with a paternal ancestral genetic homeland is often reflected in the placenames one finds there. An examination of the area between Fermoy and Lismore reveals a Ballymurphy Lower and Ballymurphy Upper close to where Murphy farmers clustered in 1911, see **Figure 6** and **7**. Since the names of many of these townlands pre-date the arrival of the Normans in 1169AD, this could mean that Ballymurphy Upper and Lower may represent the precise geographical origin of the test subjects Murphys ancestors. Further east one finds Murphy crossroads, while to the north one finds Castlecreagh, see **Figure 6** and **7**.

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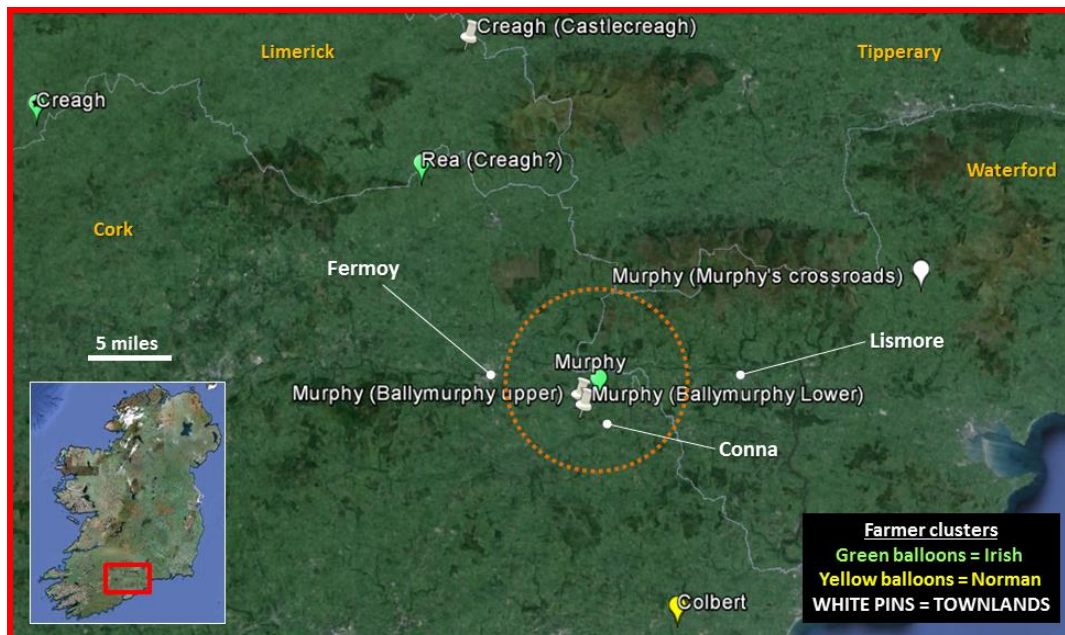


Figure 6: Mr Murphy's Paternal Ancestral Genetic Homeland. Mr Murphy's paternal ancestral genetic homeland (**orange broken circle**) lies close to the village of Conna in east Cork and close to the Wexford border. It is in this area that Murphy farmers clustered in 1911, to the north of Conna one finds the townlands of Ballymurphy Lower and Ballymurphy Upper.



Figure 7: Views from Ballymurphy Lower and Murphys crossroads. The farmland of Ballymurphy Lower (**Panel A**) may mark the precise origin of the test subjects Murphy ancestors. As the number of Murphy increased they spread to neighbouring Waterford and gave rise to new placenames including Murphys crossroads (**Panel B**; view north towards the Knockmealdown Mountains).

How to confirm a pinpointed Genetic Homeland

To confirm the area north of the village of Conna in East Cork as Mr Murphy's paternal ancestral genetic homeland will require the recruitment of farmers called Murphy from that area for commercial ancestral Y-DNA testing.

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