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tyronebowes@gmail.com

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Case Study

Pinpointing the KELLEY

Genetic Homeland

www.irishorigenes.com



A handwritten signature in black ink, appearing to read 'Tyrone Bowes', is written above the printed name.

Dr Tyrone Bowes
Updated 23th May 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. 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 'Kelly' was living in close proximity to others with whom he was related but who assumed other surnames like McCarthy, Dennehy, and Callaghan. Given that 1,000 years have passed since 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 reflected in today's DNA test results.

In Ireland surnames can still be found concentrated in the County from which they originate. In this manner one can examine the individual surname distribution maps on the Irish Origenes website and pinpoint a '**Genetic Homeland.**' The Genetic Homeland is the very 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 Genetic Homeland it can also be used to confirm it by DNA testing individuals living in the pinpointed area.

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 one can trace direct ancestry. But science has demonstrated that only 50% of individuals with a particular Irish surname will be related to the surnames founding ancestor (the surname 'Adam'), 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 a 16th/17th 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!

Pinpointing the Kelley Genetic Homeland

To identify a Genetic Homeland one must first find the surnames that continually appear as genetic matches. These reoccurring surnames are less likely to be a result of non-paternal events (adoptions/infidelity) and reflect the surname of a medieval ancestors neighbour. Results for test subject Kelley are shown in **Figure 1**.

Test Subject	67 Markers							37 markers					25 markers			
	exact	-1	-2	-3	-4	-5	-6	-7	exact	-1	-2	-3	-4	exact	-1	-2
Kelley	-	-	-	Peck(x2) ¹	-	Long(x2)	-	McCarthy(x15) Newman(x5)	-	-	Kelley(x2)	-	-	-	Keenan(x2)	Callahan(x4) Dennehy/Denney(x2) Reece(x3) ²

Figure 1: Reoccurring surname matches to test subject Kelley 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 Kelly occurs at 35/37 markers but not all Kellys will match at that level. In brackets are the number of individuals with a particular surname that appear as a match. Coloured font indicates the ethnicity associated with each surname; **Irish**, **English/Norman**, black font indicates multiple ethnicities. ¹Peck is the only surname not associated with Ireland and may be the result of a relatively recent non-paternal event. ²Reece may be a spelling variant of the Irish surname Rice.

How many Kelly Clans?

Upon commercial ancestral Y-DNA testing Mr Kelley matched others called Kelly who tested independently of him indicating that he is among the 50% of male Kellys who after an estimated 1,000 years (or since surnames first appeared) are directly descended from a Kelly-Adam (the first to take that surname), see **Figure 1**. However Kelly is the second most common surname in Ireland which suggests that there were many 'Kelly' Clans, each founded by a distinct (unrelated) founding Kelly 'Adam,' one of whom was Mr Kelley's founding ancestor. Mr Kelley's paternal ancestral link with Ireland is further confirmed by the reoccurring matches to surnames originating in Ireland or associated with Norman settlement in Ireland, see **Figure 1**.

Surname distribution mapping demonstrated that in 1911 the Kelly surname was found scattered across the entire island. A closer examination reveals at least 14 major clusters of Kelly farmers and numerous other surnames of which Kelly may be a spelling variant, see **Figure 2**. However each of these Kelly Clans will have arisen in a distinct geographical location, surrounded by neighbouring Clans some of whom they shared ancestry with. This means for example that Galway Kellys will have DNA matches to people with surnames like O'Flaherty and O'Malley, or surnames that are associated with County Galway. In this manner Mr Kelley's surname matches can reveal which Kelly Clan he is descended from and where his 'Genetic Homeland' is situated. Surname distribution mapping reveals the Mr Kelley's reoccurring surname matches are all associated with County Cork and that his Genetic Homeland will be found somewhere within that County, see **Figure 3**.

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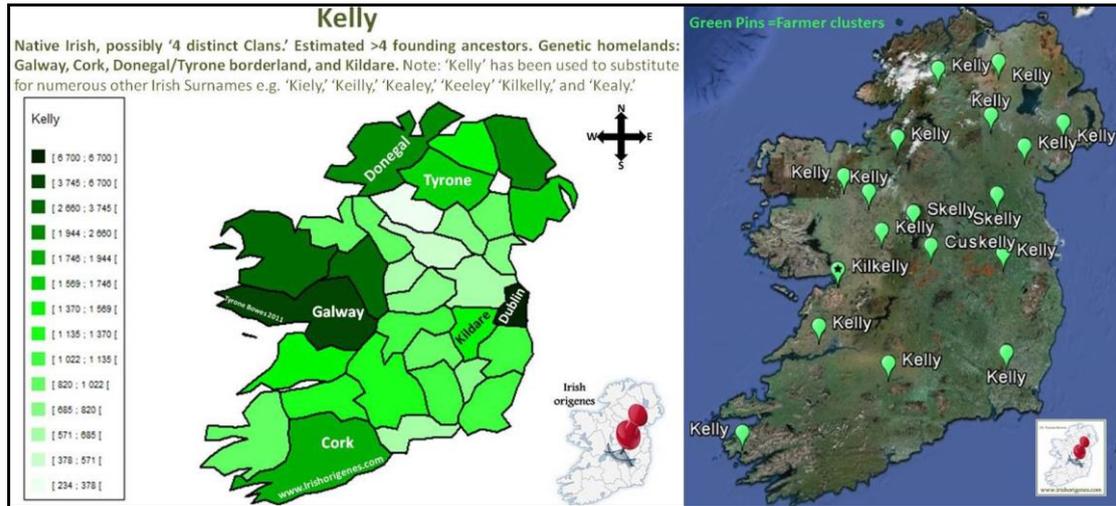


Figure 2: Distribution of the Kelly surname throughout Ireland in 1911. Surname distribution mapping (left panel) reveals that the Kelly surname is associated with almost every county in Ireland. A closer inspection reveals at least 14 clusters of Kelly Farmers (right panel) and numerous surnames like Kilkelly, Skelly, and Cuskelly of which Kelly may be a variant.

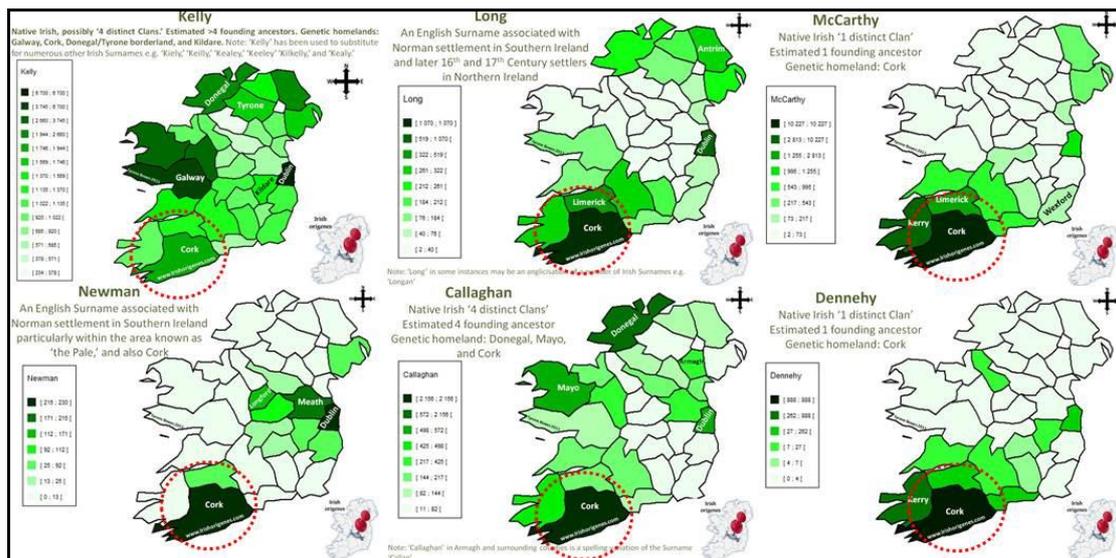


Figure 3: Mr Kelley's reoccurring Irish surname matches are all associated with County Cork. Surname distribution mapping of the surnames associated with Ireland as identified in Figure 1 reveals a paternal ancestral link with County Cork (Red circle). Individual maps are taken from the Irish Origenes surnames database.

The Kellys of County Cork

To pinpoint (to within a 5 mile radius) where Mr Kelley's Genetic Homeland is situated one must examine where farmers with the surnames Kelly, McCarthy, Long, Callaghan, Newman, and Dennehy occur within County Cork. The area where those surnames cluster together in close proximity will be where Mr Kelley's founding Kelly ancestor lived. Crucially Mr Kelley matches many individuals called McCarthy and 2 individuals with the surname Dennehy (or spelling variant). Farming communities with those surnames cluster exclusively, and in close proximity to one another in northwest County Cork, see **Figure 4**. To the east of those surnames one finds Mr

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Kelley's genetic cousins the Callaghans and to the south the Norman Longs and Newmans, see **Figure 4**. However the largest cluster of Kelly farmers appears to be on the Kerry coast some distance away from his genetic cousins, see **Figure 4**.



Figure 4: Mr Kelley's closest most frequent reoccurring surname matches cluster in southwest Ireland. Pins have been placed in the areas where the highest concentration of farmers (male heads of household) with each surname lived in 1911. Although the majority of Mr Kelley's reoccurring surname matches can be found in close proximity to one another, the Kellys appear some distance off on the Kerry Coast.

Kelley is the second most common surname in Ireland and this means that a more thorough examination of County Cork's Kelly farming community is required in order to determine whether a community of Kellys lived in close proximity to Mr Kelley's genetic cousins the McCarthys, Dennehys, Callaghans, Newmans, and Longs. By placing a pin in the townlands where each Cork Kelly farmer lived in 1911 a small clustering is observed near an area known as Glan cross, which is situated quite close to the Long farming cluster, see **Figure 5**.

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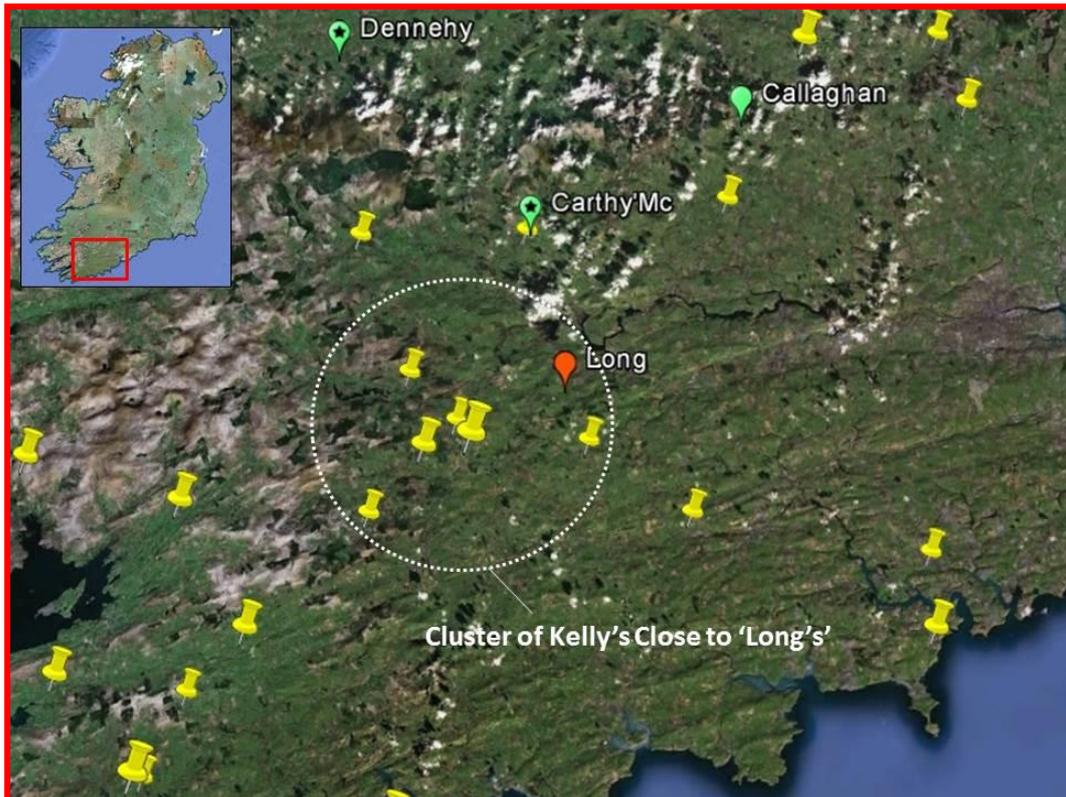


Figure 5: The County Cork Kelly Farming Community in 1911. By plotting where Kelly farmers (heads of household) occur within County Cork a small cluster of Kelly farmers (white broken circle) is revealed close to Farmers called Long and McCarthy. Pin size is indicative of frequency.

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 the McCarthy's who appear as Mr Kelley's most numerous genetic matches, see **Figure 6**. The Gaelic Irish O'Callaghans and O'Crowleys who also appear in Mr Kelley's Y-DNA results can be found in territories close to the McCarthys, while the Norman Longs are found further south near Cork City. The presence of the Norman surnames (Long and Newman) in Mr Kelley's Y-DNA results are representative of native Irish Gaels who either took the surnames of their new Norman masters, or acquired those surnames via the maternal transmission of a Norman surname, or possibly as a result of adoptions or infidelities that have occurred between neighbouring Irish and Normans since the latter's arrival in Ireland in 1169AD.

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Figure 6: The Clan Territories of Southwest Ireland. Mr Kelley shares common ancestry with some of the most prominent Irish Clans and Norman families that dominated Ireland's southwest (red arrows). The O'Crowley and O'Sullivan Clans (yellow arrows) that appear as singular matches are also found in this area.

The Kelley Genetic Homeland

Mr Kelley's Genetic Homeland is centred upon a place known locally as Glan Cross where in 1911 a small cluster of Kellys farmed the lands that their ancestors first occupied at least 1000 years ago, see **Figure 7**. His Kelly ancestors lived in close proximity to the Longs and McCarthys who appear respectively as his closest and most frequent genetic matches.

Evidence of one's ancestor's long association with a Genetic Homeland is often reflected in the placenames one finds there. Although in this part of Cork there are no placenames associated with the Kellys one does find evidence of their genetic cousins the McCarthys in at least 4 of their castles within a 7 mile radius of Glan crossroads, see **Figure 7**. Very close to Glan Cross one finds a solitary O'Crowley castle and further south numerous O'Crowley placenames, while to the north one finds a placename referring to the Leahy (Gortyleahy/Leahys field). Crowley and Leahy appear as singular matches to Mr Kelley and may represent non-paternal events that have occurred between these neighbouring Clans.

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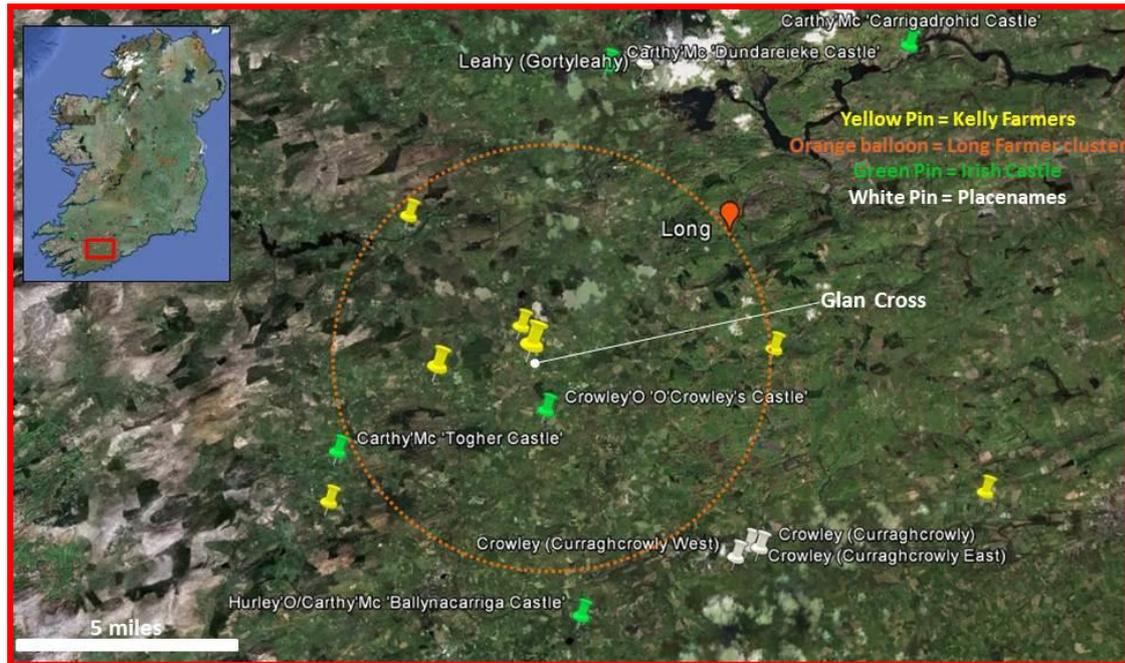


Figure 7: Mr Kelley's Genetic Homeland. Mr Kelley's Genetic Homeland (**orange broken circle**) is centred upon Glan Cross in southwest County Cork where in 1911 one finds a cluster of Kellys living close to farmers called Long and surrounded by castles built by their genetic cousins the McCarthys and O'Crowleys. In the surrounding area one can also find placenames that refer to Mr Kelley's other genetic relatives including the Leahys.

How to confirm a pinpointed Genetic Homeland

To confirm the area around Glan Cross as Mr Kelley's Genetic Homeland will require the recruitment of Kellys preferably farmers from that area for commercial ancestral Y-DNA testing.

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