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The test subject has decided to remain anonymous. Email any questions regarding the report to Dr Tyrone Bowes

Case Study

Pinpointing the McDonald Irish Paternal Ancestral Genetic Homeland

www.irishorigenes.com



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INTRODUCTION

A simple painless 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 lots of individuals with many 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 'McDonald' was living in close proximity to others with whom he was related but who inherited other surnames like Merrick and Fowler. Given that 1,000 years have passed since paternally inherited surnames were first 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.

Surnames in Ireland can still be found concentrated in the areas where they first appeared, or in the area where ones ancestors first settled. One can therefore use census data to determine the origin of the surnames that appear in one's Y-DNA results, identifying an area common to all, and reveal one's '**Paternal Ancestral Genetic Homeland.**' The paternal ancestral 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 ancestor first inherited his surname, surrounded by relatives who inherited others. It is the area where ones ancestors left their mark in its placenames, its history, and in the DNA of its current inhabitants. Since modern science can pinpoint a paternal ancestral genetic homeland it can also be used to confirm it by DNA testing individuals from the pinpointed area.

Notes of caution!

1. In Ireland each of the estimated 1,500 distinct surnames had a single founding ancestor, that's an estimated 1,500 Adams 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 males will have an association that has arisen as a result of what are called 'non-paternal events,' usually a result of adoption or maternal transfer of the surname.
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 descended from 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!

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Interpreting the Y-DNA results

To pinpoint a paternal ancestral genetic homeland one must first identify the surnames that appear as one's closest genetic matches upon commercial ancestral Y-DNA testing. Those surnames, particularly one's that *recur* among one's closest Y-DNA genetic matches, will typically reflect the surnames of one's medieval ancestral neighbours. Mr McDonald's closest genetic surname matches as revealed by commercial ancestral Y-DNA testing are detailed in **Figure 1**.

37 Marker Matches					
Genetic Distance	Last Name	Earliest Known Ancestor	Y-DNA Haplogroup	Terminal SNP	Match Date
3	McDonald	Mayo, Ireland	I-M423	M423	6/15/2020
25 Marker Matches					
Genetic Distance	Last Name	Earliest Known Ancestor	Y-DNA Haplogroup	Terminal SNP	Match Date
1	Fowler	John Fowler, b. 1795 d. 1843 SC	I-P37		6/15/2020
1	Merricks	William Merricks, born 1754, Pittsylvania co, Va	I-L1498	L1498	6/15/2020
2	McDonald	Mayo, Ireland	I-M423	M423	6/15/2020
12 Marker Matches					
Genetic Distance	Last Name	Earliest Known Ancestor	Y-DNA Haplogroup	Terminal SNP	Match Date
0	Fowler	John Fowler, b. 1795 d. 1843 SC	I-P37		6/15/2020
0	McDonnell	Patrick Henry McDonnell	I-P37	P37	6/15/2020
0	Merricks	William Merricks, born 1754, Pittsylvania co, Va	I-L1498	L1498	6/15/2020

Figure 1: Mr McDonald's closest genetic surname matches as revealed in the FTDNA Y-DNA STR database. The more Y-DNA markers two people share the more recent their shared paternal ancestor once lived. The test subject's closest genetic surname matches are **NOT RANDOM**; he matches others named McDonald/McDonnell (red arrows) who tested independently, together with individuals with surnames associated with Ireland, at least one of who records a paternal ancestral link within Ireland. In addition, the test subject carries the I-P37 Y-DNA marker which is associated with Neolithic settlement within Ireland.

Upon Y-DNA testing the test subject matched others named 'McDonald/McDonnell' who tested independently, see **Figure 1**. This indicates that the test subject is directly descended from a McDonald-Adam; literally the first male (Adam) to take that surname who lived approximately 1,000 years ago (when paternally inherited surnames first appeared). The 'McDonald' surname is associated with both Ireland and Scotland. However, the test subject's closest genetic surname matches are dominated by Irish-associated surnames together with a paternal Y-DNA genetic marker that is associated with Ireland, see **Figure 1**. The test subject's Y-DNA results reveal that he is descended from an Irish McDonald-Adam.

The McDonald Surname in Ireland

Distribution mapping of Catholics named McDonald (together with common Irish spelling variants) reveals that they were not distributed evenly throughout Ireland but were associated with specific counties, see **Figure 2**. Since surnames arose in an agricultural based society, farmers with each surname can still be found concentrated in the area where their surname first appeared, or in the areas where one's ancestors first settled. An examination of the distribution of Catholic farmers with any of the common spelling variants of Gaelic McDonald reveals that they occur in 19 distinct groups within Ireland, see **Figure 3**. This indicates the existence of potentially at least 19 genetically (and geographically) distinct Clans that are associated with the 'McDonald' surname; one of whom (as revealed by the Y-DNA results) the test subject shares common paternal ancestry with.

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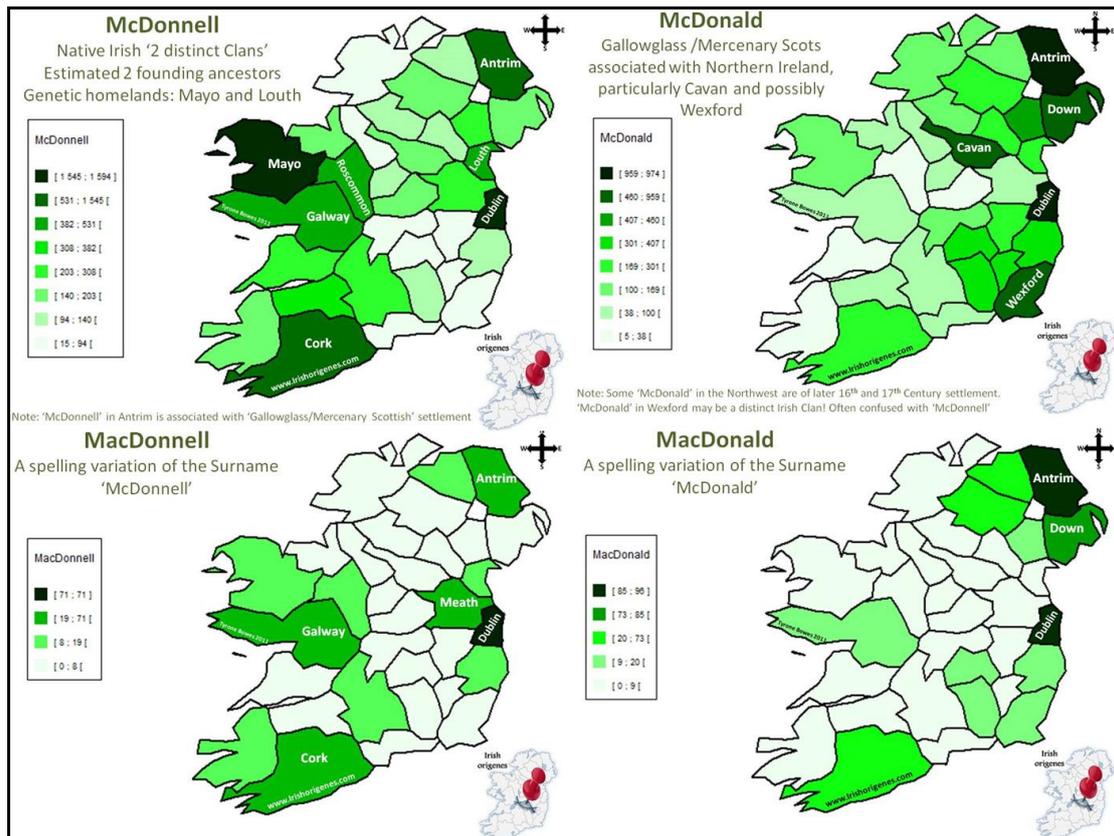


Figure 2: Distribution mapping of Catholic Irish named McDonald and McDonnell in 1911. Distribution mapping reveals that individuals named McDonnell, McDonald, MacDonnell and MacDonald were not distributed evenly throughout Ireland but were associated with specific Irish counties. While many of the Catholics (descendants of those who lived in Ireland before the 16th and 17th Century Plantations) that carry the McDonald (and variants thereof) may be of mercenary Scottish Gallowglass origin (post 1259AD), some are of Gaelic Irish origin.

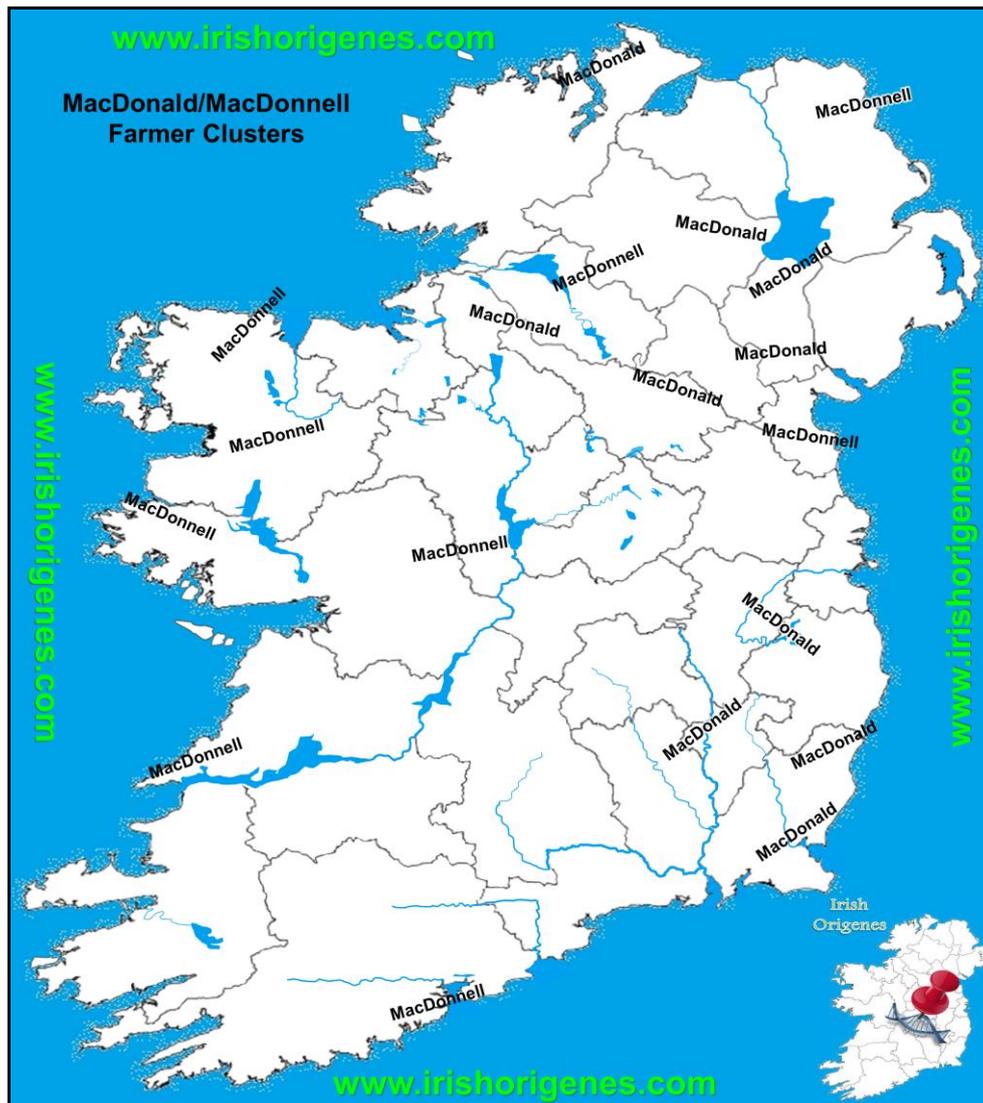


Figure 3: The Catholic McDonald farming community in 1901. Distribution mapping reveals that farmers named McDonald or McDonnell were not distributed evenly throughout Ireland but were associated with 19 specific locations. Since the test subject's Y-DNA results reveals that his paternal ancestry is linked to a Gaelic Irish McDonald/McDonnell-Adam, his paternal ancestry is therefore connected to one of 19 possible locations within Ireland. Each surname is positioned in the area where farmers with that surname concentrate in 1901. The most common spelling is detailed in each location.

A Paternal Ancestral link with the west of Ireland

The method of using genetically recurring surname matches as revealed by commercial ancestral Y-DNA testing to pinpoint one's paternal ancestral genetic homeland works by exploiting the link between the Y chromosome, surname and land which are typically passed from father to son through the generations. In the absence of a link to the land the process becomes more challenging. The link with the land is greatest among the farming community, and since farmers in Ireland can still be found farming the lands where their ancestor lived when he first inherited his surname, or where one's ancestor first settled within Ireland, one can plot where farmers with the surnames that appear in one's Y-DNA results originate, and identify an area common to all. This means for example, that a 'McDonald' from Argyllshire will upon Y-DNA testing be a genetic match to individuals named MacLeod, MacLean

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and MacKay; surnames associated with the Western Isles of Scotland. In contrast, a McDonald from County Cork will be a Y-DNA genetic match to individuals named Sullivan, McCarthy and Donohoe; surnames associated with the far southwest of Ireland. Hence it is the test subject's closest genetically recurring surname matches revealed upon Y-DNA testing that will identify where his founding McDonald ancestor lived.

Y-DNA testing revealed that the Irish-associated surnames Merrick and Fowler appeared among the test subjects closest genetic surname matches, see **Figure 1**. The Fowler surname is reportedly an anglicised form of Irish 'Foley' (MacLysaght 'The Surnames of Ireland'), and an examination of the distribution of farmers named McDonald/McDonald, Merrick and Fowler/Foley reveals that they crucially only occur together within the west of Ireland; in an area where the test subject's I-P37 marker also occurs in the local population, see **Figure 4**. An examination of the Surnames associated with the west of Ireland (as it appears on the Irish Origenes Surnames map) reveals McDonalds, Merricks and Foleys in Central Mayo, and close to an area where farmers with surnames that are also associated with the I-P37 marker concentrate, see **Figure 5**.

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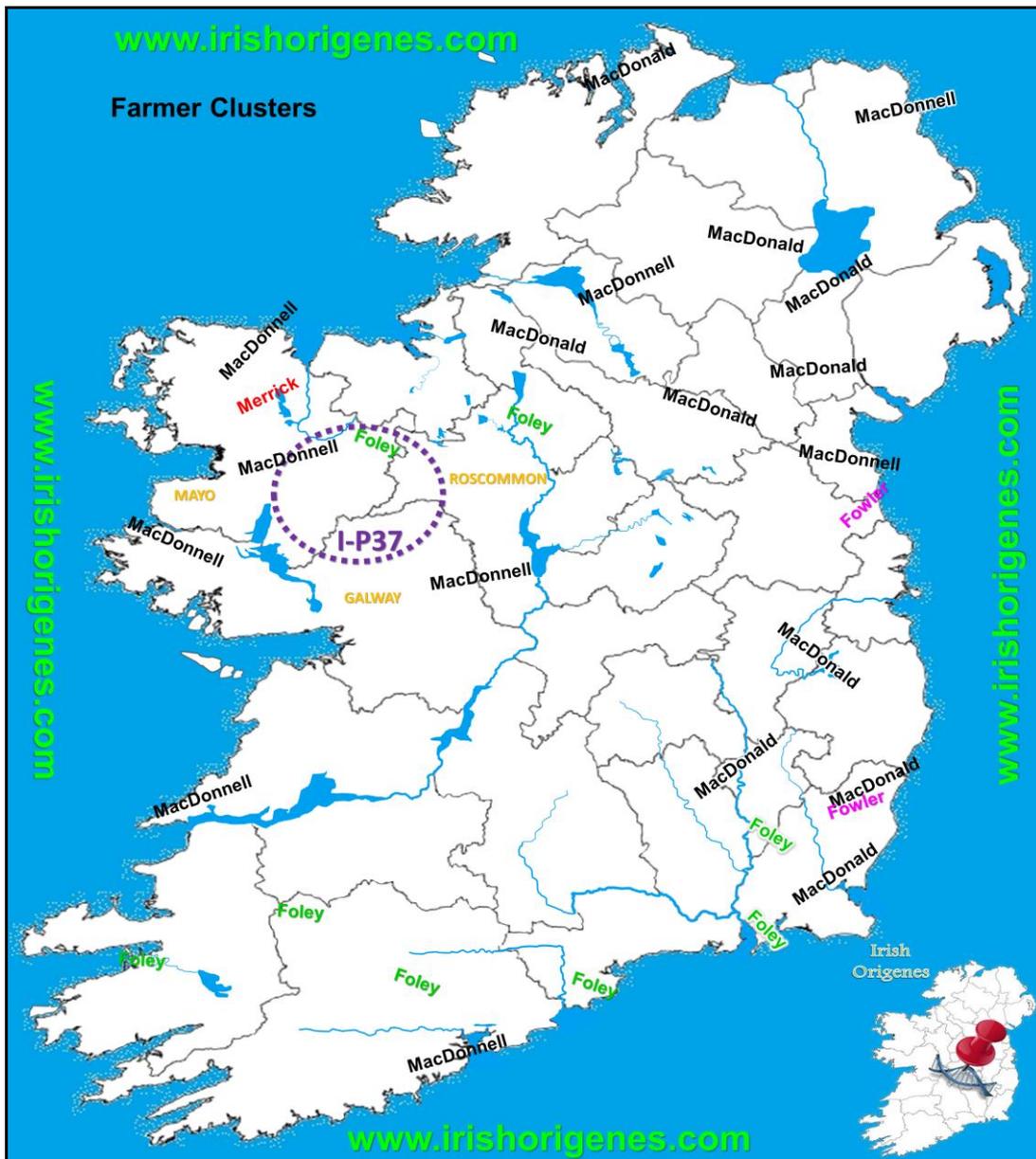


Figure 4: Distribution mapping reveals a paternal ancestral origin within the west of Ireland. Distribution mapping of the McDonald/McDonnell, Merrick and Fowler/Foley surnames reveals that they are associated with multiple locations within Ireland, but that they occur together within County Mayo in the west of Ireland; close to an area where the test subject's I-P37 marker occurs in the local population (purple broken circle).

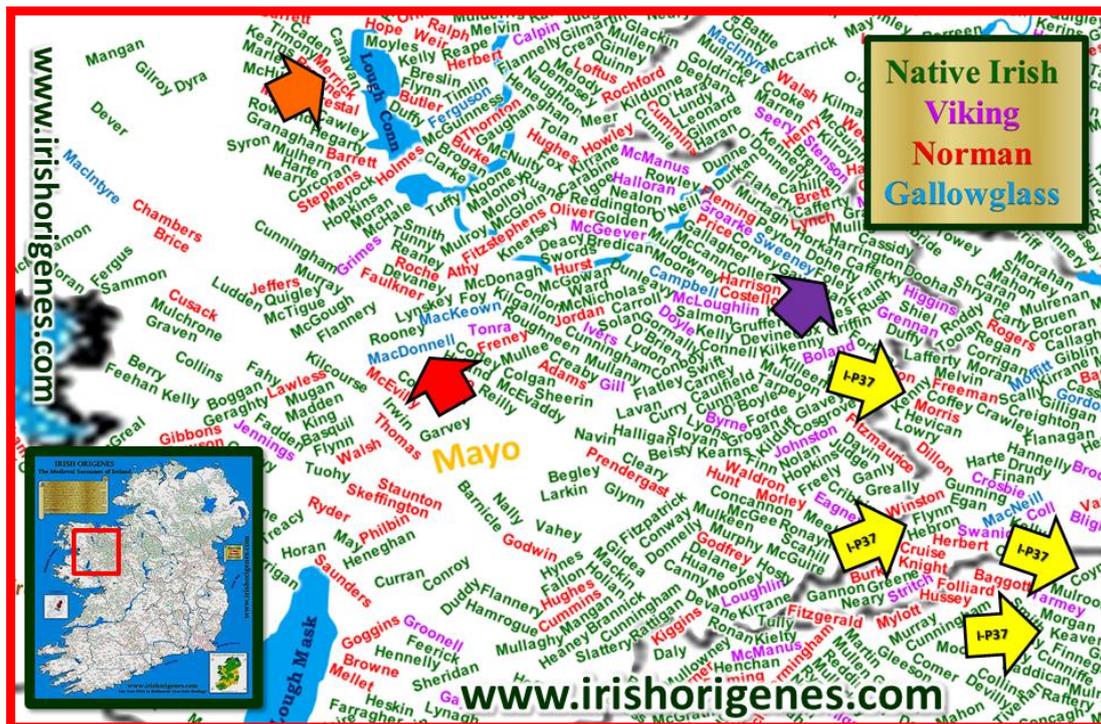


Figure 5: The surnames of the west of Ireland. An examination of the Pre-Plantation surnames found in the west of Ireland reveals the test subject's McDonald ancestors (red arrows) concentrated between Loughs Conn and Mask in Central Mayo. In the surrounding area one finds the Merrick surname (orange arrow) which appears as a genetic match, and Foley (purple arrow) from which Irish 'Fowler' is believed to be an anglicised form. To the east, on the Mayo, Roscommon and Galway borderlands one finds many of the surnames (yellow arrows) which research at Irish Origenes has revealed are associated with the test subject's I-P37 paternal genetic marker. These genetically matching surnames arose among a group of Irish males who lived in the west of Ireland an estimated 1,000 years ago. Image taken from the Irish Origenes Surnames of Ireland map which details where farmers with each surname concentrate in early census data. The most common spelling is detailed in each location.

The Clan Territories of County Mayo

By the 14th and 15th Centuries Ireland was a patchwork of territories which were dominated by over 400 of the most notable Irish Clans and Norman families. Modern commercial ancestral Y-DNA testing will often reveal one's shared paternal ancestry with at least one of the Clans or Families that once ruled over one's paternal ancestral genetic homeland. The Irish Origenes Clan Territories of Ireland Map was reconstructed based on the location of castles and towerhouses and their known historical link to a particular Clan or Family. An examination of County Mayo as it appears on that map reveals an area dominated by Gaelicised Norman families, see **Figure 6**. The Clan map reveals that the test subject's McDonnells were employed as mercenaries by the Burkes who dominated much of the west of Ireland, see **Figure 6**. The McDonnells were stationed between Lough Mash and Lough Corrib, an area also associated with the Coyne's; a Clan that research at Irish Origenes has revealed are also associated with the test subject's I-P37 Y-DNA marker, see **Figure 6**.



Figure 6: The Clan territories of the west of Ireland. An examination of the west of Ireland as it appears on the Clan Territories map reveals an area dominated by Norman Families, many of whom had been adsorbed by Gaelic Ireland and adopted Irish surnames. The map reveals that the test subject's McDonnells (red arrow) were employed as mercenaries by the Norman Burkes and were stationed between Lough Corrib and Lough Mask. Research at Irish Origenes has also revealed that the neighbouring prominent Coyne Clan (yellow arrow) are also associated with the test subject's I-P37 genetic marker. Image taken from the Irish Origenes Clans of Ireland map which was reconstructed based on Irish castle locations and their historically associated Clan or Family.

Mr McDonald's Irish Paternal Ancestral Genetic Homeland

Early census data reveals that farmers named McDonnell concentrate in the farmland that lies to the east of Castlebar town in County Mayo; and it is there that the test subject's Irish paternal ancestral genetic homeland is to be found, see **Figure 7**. It was there that the test subject's Irish paternal ancestor lived approximately 1,000 years ago when he first took the 'McDonnell' surname. His founding paternal ancestor lived among a group of Irish males among whom arose other surnames like Merrick and Foley/Fowler. When one's ancestors and their genetic relatives have lived in an area for long enough, one will often find evidence of their ancestral links with that area in the surrounding castles and placenames. An examination of the surrounding area reveals at least 2 towerhouse/castles associated with the mercenary McDonalds/McDonnells, together with a townland know as Carn(Fowler) to the northwest, see **Figure 7**. The test subject's McDonald ancestors will also have left evidence of their long ancestral links with this area in its history, and in the DNA of the current inhabitants.

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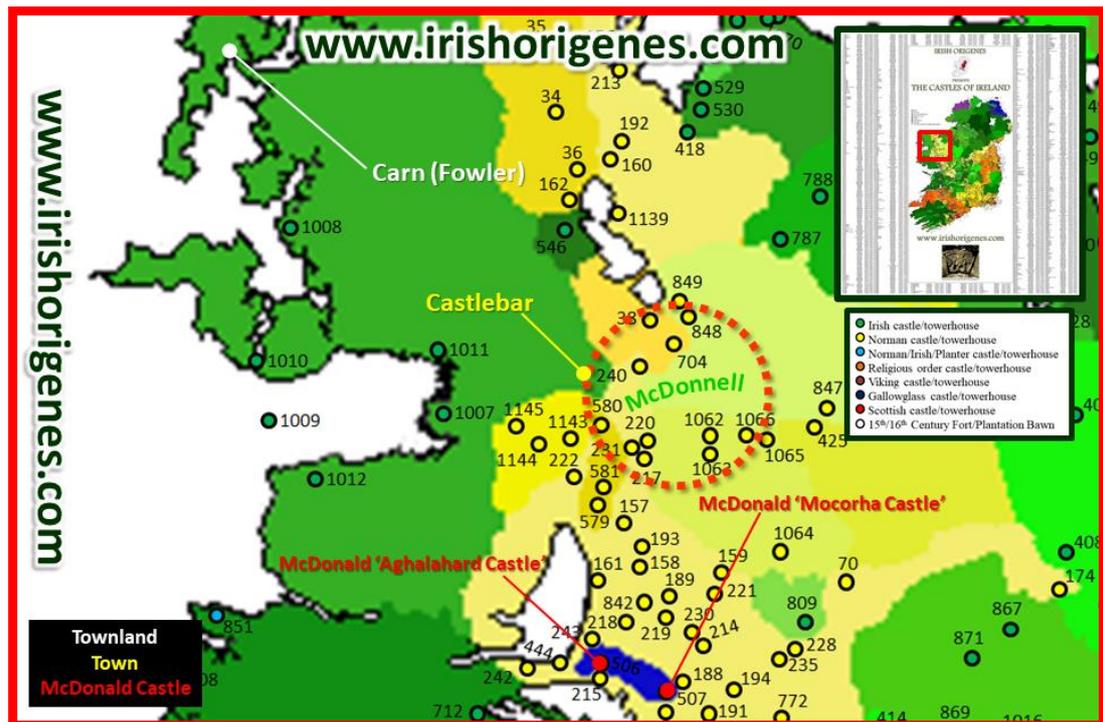


Figure 7: Mr McDonald's Irish Paternal Ancestral Genetic Homeland. The test subject's Irish paternal ancestral genetic homeland (**orange broken circle**) is located in the farmland that lies to the east of Castlebar town in County Mayo. It was there that his Irish paternal ancestor lived when he first acquired the 'McDonnell' surname approximately 1,000 years ago. His McDonald founding ancestor lived surrounded by male relatives who acquired other surnames like Merrick and Foley (Fowler). The surrounding area reveals castles/townlands that are associated with the test subject's McDonald ancestors, and a townland that is a reference to his Fowler/Foley genetic relatives. The test subject's genetic relatives will also have left evidence of their long ancestral links with this area in its history, and in the DNA of its current inhabitants. Image taken from the Irish Origenes Castles of Ireland Map.

Neolithic farmers

The test subject's I-P37 Haplogroup indicates that his paternal ancestors were Neolithic farmers who colonised into Ireland approximately 5,000 years ago and dominated the island until the arrival of the Celts from around 1000BC. The arrival of the Celts would have brought war and disease, forcing the Neolithic survivors into remote areas like the west of Ireland. Over time, the descendants of the Neolithic inhabitants would be adsorbed into the Gaelic Irish society that evolved over the following millennia.

How to confirm a pinpointed 'Paternal Ancestral Genetic Homeland'

One must keep in mind that this is a scientific DNA approach to identifying an origin. As such, the paternal ancestral connection to the identified area can be confirmed by Y-DNA testing McDonald males from the farmland that lies to the east of Castlebar town in County Mayo.

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