

Case Study

Pinpointing the EGAN Genetic Homeland

www.irishorigenes.com



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

Dr Tyrone Bowes
Updated 2nd August 2012

Introduction

A commercial 37 marker Y chromosome test will potentially provide one with the names of many hundreds of individuals with whom one shares ancestry, but what often perplexes people is how one can match many individuals with different surnames? The answer is quite simple. Roughly 1,200 years ago one's direct medieval male ancestor, the first for example to call himself 'Egan' was living in close proximity to others with whom he was related but who assumed other surnames like O'Higgins, Tighe and Ward. Given that 1,200 years have passed since surnames were adopted, there will be many descendants of these individuals some of whom today will undergo 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 5km (or 3 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 from the pinpointed area. The Case Study below will detail how I made sense of Dr Egan's DNA test results and at the end it will provide a checklist on how to proceed in identifying your own Genetic Homeland.

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 1,200 years ago. As a result if your recent Irish ancestors were originally 9th Century Viking raiders, 11th 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 early pre-Christian Celtic tribes of Ireland. One must approach this process with an open mind!

Egan: A brief family history

Dr Colin Egan is a good friend of mine and was a willing participant in this study. In this study I set out to demonstrate the reproducibility of an analytical research method which uses only the surnames of individuals whom he matched via commercial ancestral Y Chromosomes DNA testing to pinpoint a time and place where his founding ancestor lived. Colin had no idea about his distant ancestry. His family is from County Kildare but his father is aware that his family's recent ancestry is connected with Athlone town on the banks of the Shannon in County Westmeath.

Pinpointing Colin Egan's 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. Tabulated results for test subject Egan are shown in **Table 1**.

SURNAMES THAT REOCCUR AS A GENETIC MATCH FOR TEST SUBJECT EGAN FROM 37 MARKER Y-CHROMOSOME DNA TESTING

Test subject	37 Marker Y-DNA test							
	37 marker level					25 Marker level		
	exact	-1	-2	-3	-4	exact	-1	-2
Egan	-	Keegan(x9)	Egan(x30)	Higgins(x6) Dunn(x6)	Tighe(x2) Larkin(x3)	-	Ward(x2)	Hannon(x2)

Table 1: In this table are listed the surnames that continually reoccur as a genetic match. Each surname appears at the earliest point at which it occurs, for example the first match occurs with another Egan in 35 of 37 markers, but not all of the other individuals with the surname 'Egan' will match at this level. Coloured font indicates ethnicity associated with each surname, Green; Irish.

EGAN AND KEEGAN

Colin's closest genetic matches are to lots of individuals with the surnames Keegan and Egan. This indicates that Colin is part of 50% of individuals who after over 1,200 years have retained the surname of their founding ancestor. Surname distribution mapping shows that the surname Egan has a distribution pattern typical of one associated with a single Clan, in this case centred upon the Roscommon/Galway/Offaly borderland, see **Figure 1**. In comparison the surname Keegan exhibits a pattern typical of a surname variant which is often found scattered in the Counties that surround the County of Origin. Keegan is found concentrated in Leitrim and Westmeath, Counties that border Roscommon. Both Keegan and Egan appear to have arisen when the original Irish surname, in Gaelic called MacAodhagain (son of Aodhagain) was anglicised.

Egan - A Case Study

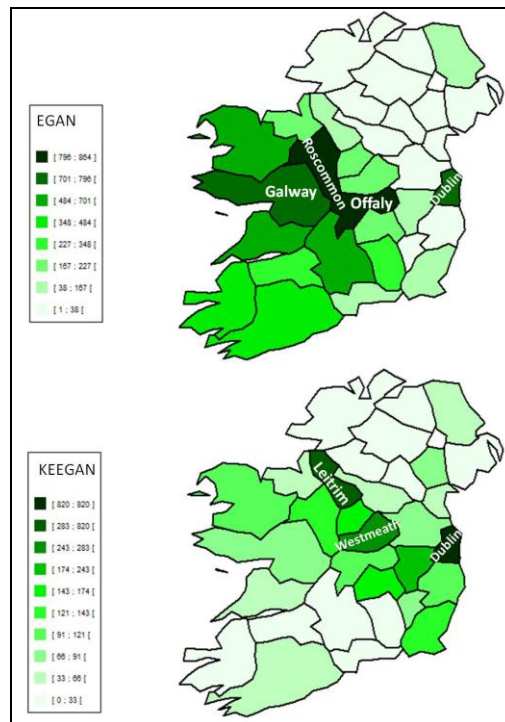


Figure 1: Distribution of the Egan and Keegan surnames throughout the 32 Counties of Ireland. The Egan Surname exhibits a typical distribution pattern associated with a single Clan centred upon a single location at the Roscommon/Offaly borderland. Keegan exhibits a typical distribution pattern of a spelling variant, which is often found in the Counties that border (e.g. Leitrim and Westmeath) the Counties where the original surname is located (Roscommon and Offaly). Surname distribution maps taken from the [Irish Origenes surnames database](#).

WHERE DO THE HIGGINS, TIGHE, WARD, HANNON, LARKIN, AND DUNNE SURNAMING ORIGINATE?

Colin's next closest genetic matches are to multiple individuals called Higgins, Tighe, Ward, Hannon, Larkin, and Dunne. By examining the surname distribution maps from the Irish Origenes website one can see a clear association among all these surnames with the West of Ireland, see **Figure 2**.

To pinpoint the Genetic Homeland one can stick pins on these surnames (present in **Table 1**) where they appear on the [Irish Origenes Surnames of Ireland map](#) to see a pattern emerge, see **Figure 3**. There are 2 clusters of Farmers with the surname Egan, found relatively close together. One cluster; referred to as the Northern Egan's is found in North West Roscommon. The second referred to as the Southern McEgan's is found concentrated in North Western Offaly. The clustering of pins in both locations suggests that both Clans are related and have arisen due to migration. Since Colin is part of the 'Niall of the nine hostages' R1b haplotype, which emerged from the far Northwest of Ireland, this suggests the Northern Egan's as the founding Clan, and where they in north Roscommon is the site at which the first MacAodhagain appeared.

Egan - A Case Study

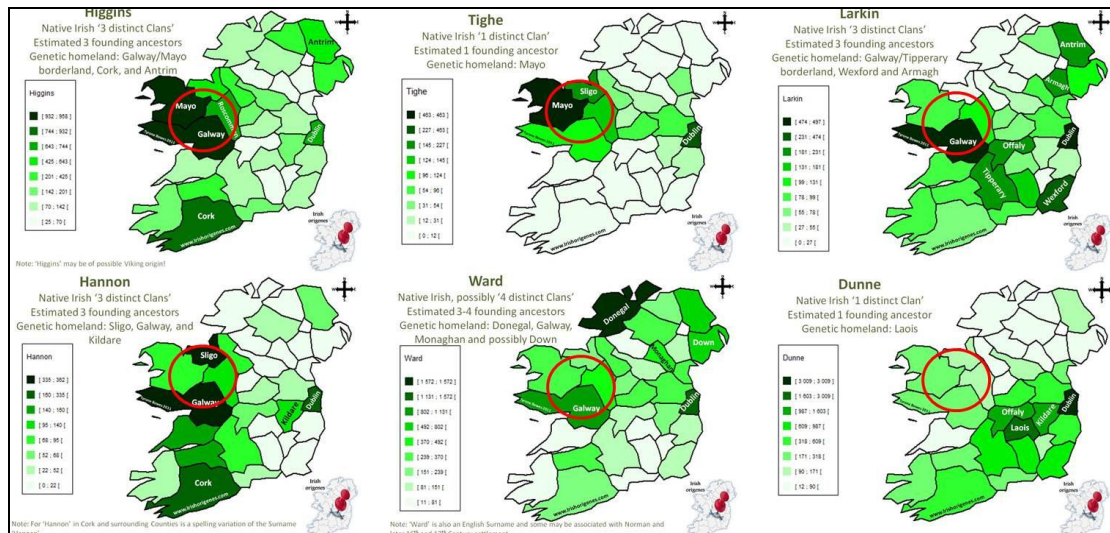


Figure 2: Surname distribution maps Dr Egan’s reoccurring surname matches. The surnames Higgins, Tighe, Larkin, Dunne, Hannon, and Ward and show a clear association with the west of Ireland (Red circle). Images are taken from the [Irish Origenes Surnames database](#)

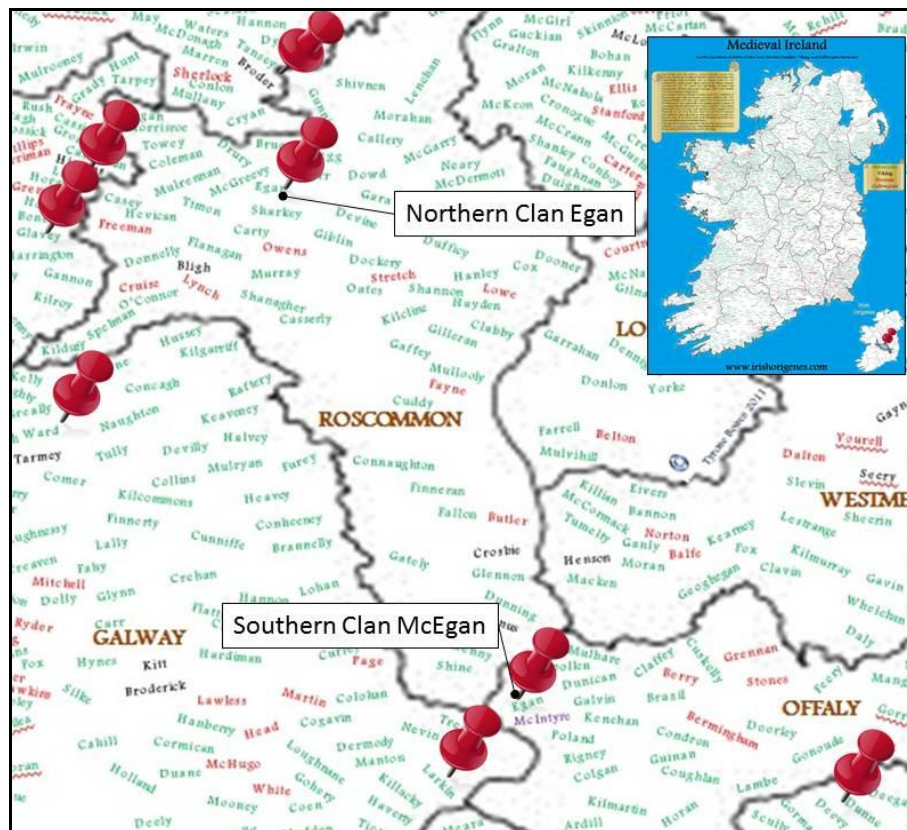


Figure 3: The Irish Origenes Surname distribution map showing precisely where Farmers associated with each Surname are clustered in 1911. There are 2 areas where the Egan Surname clusters, indicating that there are 2 medieval Egan Clans situated in relatively close proximity to one another. When one places pins on the surnames of Dr Egan’s genetic matches they cluster predominantly in and around the Northern Clan Egan. [This map is available from the Irish Origenes website.](#)

Egan - A Case Study

The Genetic Homeland of the Egan's is centred upon Coolougher in Roscommon, see **Figure 4**. Colin's ancestors lived there for hundreds if not thousands of years and have left their mark in the DNA of the areas current inhabitants. At some point in time a branch separated and migrated south becoming the southern McEgan's. The DNA test results may provide a clue as to whether or not Colin's ancestors took part in this migration.

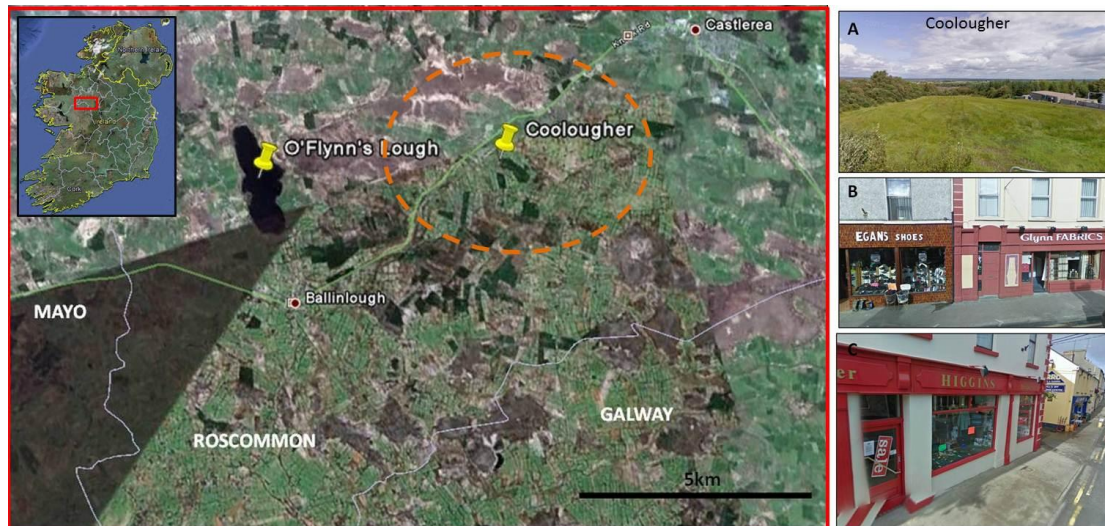


Figure 4: Dr Egan's Genetic Homeland in County Roscommon. The Egan Surname in Roscommon is centred upon the area known as Coolougher (orange circle) situated between O'Flynn's Lough and Castlerea town. **Panel A** shows the typical farming landscape of Coolougher (looking northeast towards Castlerea). Castlerea is the closest town to Coolougher and the second largest town in Roscommon with a population of approximately 2,500 people. A stroll down Castlerea Main Street identifies a number of businesses with surnames that occur as genetic matches to Colin, including Egan, Glynn, and Higgins in **Panel B** and **C**.

Northern Egan or Southern McEgan? (and how to confirm the Genetic Homeland)

The notable Southern McEgan's had by the 15th Century a fragmented territory in the south, see **Figure 5 and 6**. While the Northern Egan's appear to have slipped into obscurity, the only genetic relatives with a territory in the area being the O'Higgins, see **Figure 5 and 6**. If Colin's ancestors had remained in Northern Roscommon, it is less likely that he would show any genetic matches to surnames found further South in Offaly, but he does! Colin's matches to the surnames Larkin and Dunne in Offaly suggest that his most recent ancestry lies with the Southern MacEgan's. This is only speculation, and the answer to this question will only be answered by DNA testing Farmers called Egan from both locations (Roscommon and Offaly).

Egan - A Case Study

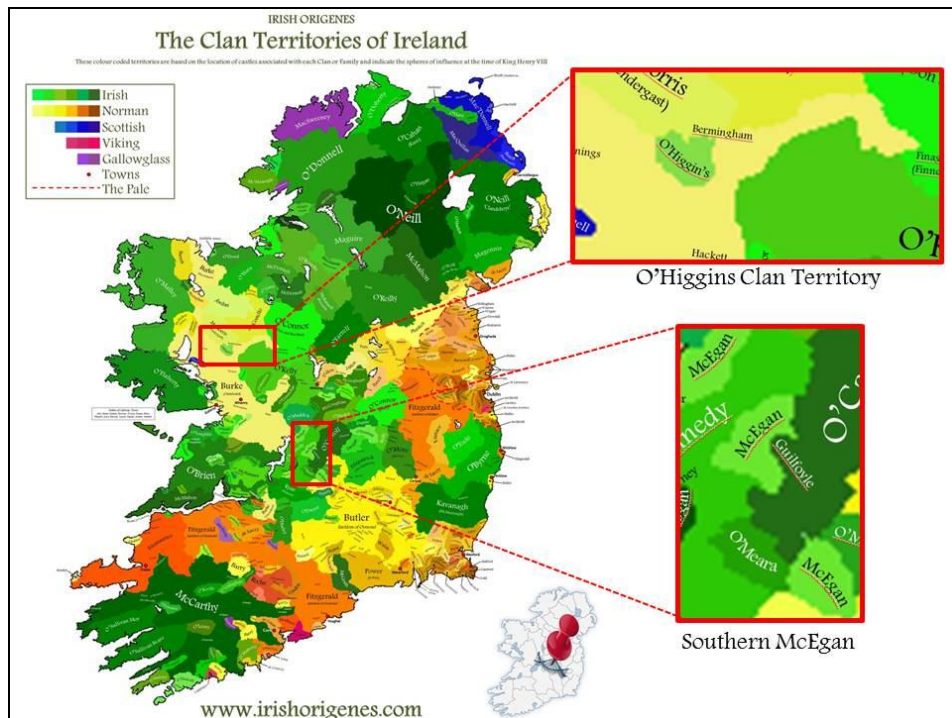


Figure 5: Irish Origenes Medieval Clan Map of Ireland showing the location of the O'Higgins and Clan MacEgan territories. (red boxes magnified)

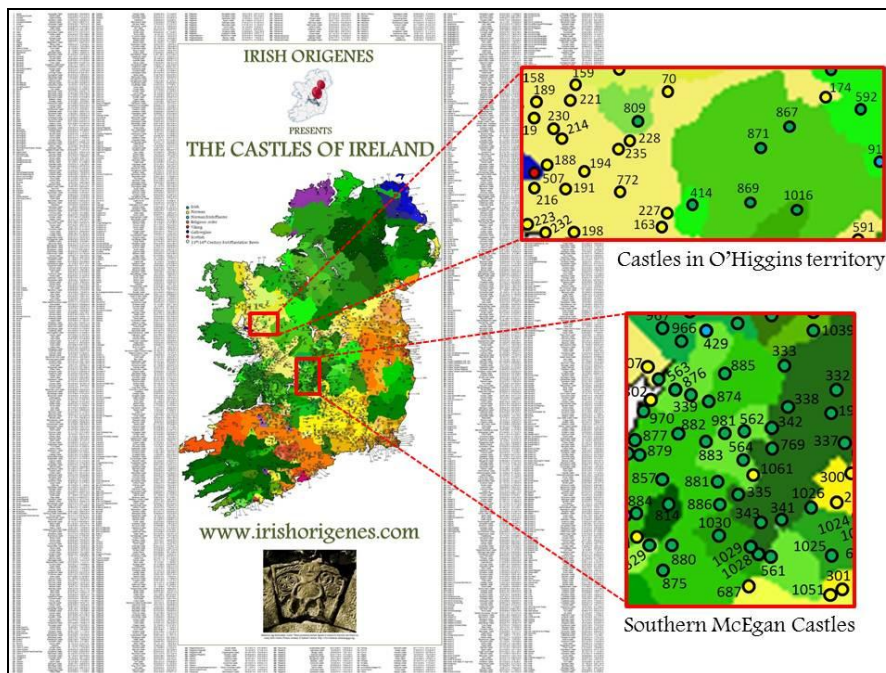


Figure 6: Irish Origenes Castles of Ireland Map showing the location of the castles associated with O'Higgins (809) and the southern MacEgan's (429, 561-564, 981), magnified. The locations and known historical associations of these castles was used to reconstruct the Irish Origenes Clan Territories of Ireland Map.

CHECK LIST FOR DISCOVERING YOUR OWN GENETIC HOMELAND

1. First you must order a Y-DNA37 test from Family Tree DNA. To order follow the 'are you a warrior' link from the [Irish Origenes](#) homepage.
2. [Irish Origenes Surnames database](#)
3. [Irish Origenes Surnames map](#) Stick a pin on your Surname and on the Surnames of your genetic matches (as revealed by DNA testing) to discover your Genetic Homeland.
4. Google Earth.
5. [Irish Origenes Clan Territories Map](#). This map details the territories of over 400 of the most prominent Irish Clans and Norman families and is based on the location of nearly 1,500 castles and their known historical association to these Clans/Families.
6. [Irish Origenes Castles of Ireland Map](#). This map details the names and precise location of nearly 1,500 castles in Ireland. Input the co-ordinates into Google Earth and view the castles on street view.
7. Your Genetic Homeland can be confirmed by recruiting male volunteers with the Surname of interest from the identified area for Y-DNA37 testing.

ALTERNATIVELY ORDER YOUR OWN CASE STUDY BY CONTACTING ME DIRECTLY tyronebowes@gmail.com

The consultation for your own Case Study is free. At present there is an 86% success rate. If in the unlikely event that I cannot pinpoint your Genetic Homeland I will explain why and I will not charge you.

Every successful Case Study customer also receives an Irish Origenes Surnames of Ireland, Clan territories of Ireland, and the Castles of Ireland map.