

Case Study

Pinpointing the HART

Genetic Homeland

www.irishorigenes.com



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

Dr Tyrone Bowes
28th April 2012

Introduction

A commercial 37 marker Y chromosome DNA 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 'Hart' was living in close proximity to others with whom he was related but who assumed other Surnames like O'Brien, Hogan, and Donohoe. 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. This Case Study details how I used the test subject 'Hart's' Y-DNA results to pinpoint his 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 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 ancestor was originally a 9th Century Viking raider, 12th Century conquering Norman, or a 16th Century Planter, 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 GENETIC HOMELAND

To identify one’s 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 ‘Hart’ are shown in **Table 1**.

SURNAMES THAT REOCCUR AS A GENETIC MATCH TO TEST SUBJECT HART 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
Hart	Hart (Hartary) (Hartigan) x8	O'Brien (Bryan) (O'Briant) (Bryant) x32	Donohoe (O'Donoghue/O'Donoghue/Donahoo) x6 Hogan/Hogin (x18) Kennedy (x2) Callahan/Callaghan (x6)	Brown (x3) O'Mahony (x6) Casey (x5) Brooks (x2) Malone/Melone (x3)	Davis (x2) McCraw/McCraw (x7)* Sweetman (x2) Littrell/literal (x4) McLain (x2) Kelly (x8) Butler (x13) West (x2) Rines (x2) Neal/O'Neill (x4)	Thomas (x2) Wallace (x2)	Carey (x5) McHone (x2) McDonnell (x2) Noland (x3)* Crowe (x3) Dorcy/D'Arcy (x2)	Roach (x2) Slattery (x2) McCoy/Coy (x2) O'Connor/Connor (x2) Tierney (x2) O'Halloran (x2) Murphy/Murphey (x2) Keane/Kane (x2)

Table 1: Reoccurring surname matches for test subject Hart. Surnames appear at the point at which they first occur as a genetic match e.g. the first match to another individual called Hart occurs at 37/37 markers, but not all Hart’s will match at the is level. Figures in brackets represent the number of individuals with a particular surname who occur as a genetic match. Coloured font denotes the ethnicity associated with each surname; **Irish**, **Norman**, **Scottish**, and **Viking**. *McCraw/McCraw and Noland represent multiple individuals from the same family undergoing DNA testing. Surnames in **bold** reoccur greater than 5 times and represent surnames/Clans with a strong ancestral link to the test subject Hart.

Firstly the test subject’s closest genetic matches are to other individuals called Hart. This indicates that the test subject is part of the 50% of individuals who after an estimated 1,000 years have retained the surname of their founding ancestor, the first to call themselves Hart (the Hart Adam so to speak). Secondly, there are an overwhelming number of reoccurring matches to Irish surnames which indicates that the test subject’s ancestors were native Gaels and his medieval and ancient ancestry is connected to Ireland.

Hart is derived from the personal name ‘Art/Airt’ which depending on the source can mean bear, hero, or a shortened form of ‘Arthur.’ In 1911 the most common spelling of the surname in Ireland was Harte. Surname distribution mapping throughout the 32 Counties of Ireland shows that the Harte surname was found concentrated in 4 different location; Sligo, Tyrone, Meath, and Cork, indicating 4 distinct and (potentially) unrelated Clans in Ireland that used surnames derived from the personal name ‘Art,’ see **Figure 1**. However Hart(e) may also have been used to shorten other Irish surnames including Hartigan and Harty (in the case of Harty, the **y** may simply be a reflection of regional variations in the spelling of the surname Harte, the **y** mimicking in sound the presence of the **e**).

Surname distribution mapping show that Hartigan and Harty are associated with the ancient area in Ireland called Thomond, which encompassed Limerick, Clare, and north Tipperary, see **Figure 1**. Thomond was the ancient stronghold of the O’Brien’s, which is also the most prominent surname that occurs as a genetic match (32

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individuals) to test subject 'Hart' in **Table 1**. Similarly a single Hartigan also appears as a genetic match in **Table 1**.

WHERE DOES THE SURNAME HART ORIGINATE WHEN FOUND IN IRELAND?

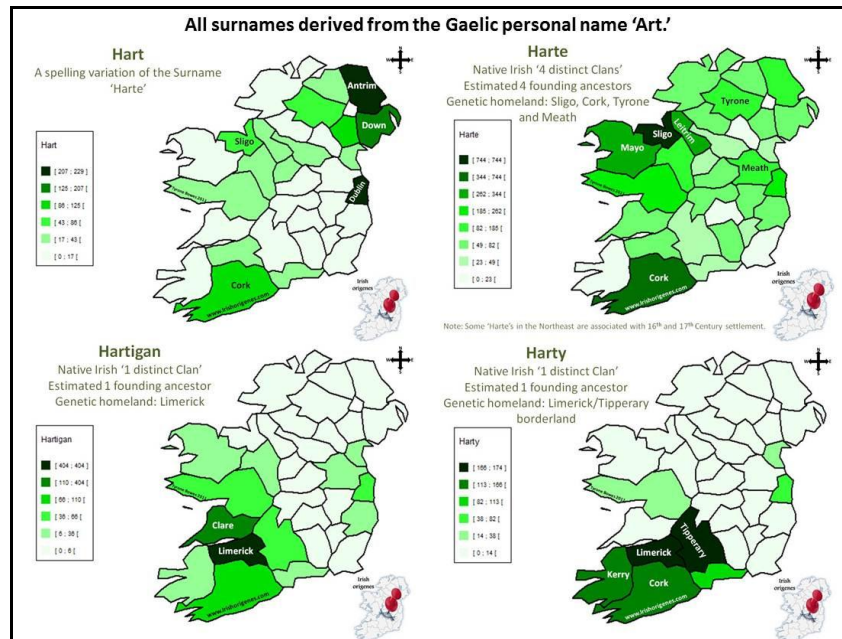


Figure 1: The Surname Hart in Ireland. Surname distribution mapping of the Harte (and Hart) surname shows that it is associated with 4 different locations in Ireland; Sligo, Cork, Tyrone, and Meath. This indicates that there are potentially up to 4 unrelated Clans for whom 'Hart' has been used to anglicise a Gaelic surname derived from 'Art.' In the southwest Hart and Harte may simply have been used to shorten the surnames Hartigan and Harty. Both Hartigan and Harty are associated with the ancient Irish Kingdom called Thomond (consisted of Counties Clare, Limerick, and northern Tipperary).

There are potentially 4 different locations in Ireland where the test subject 'Hart's' ancestors lived. Since Ireland remained essentially an agrarian society until very recently, surnames could still be found concentrated in the areas where they first arose. Hence if one looks at the reoccurring surnames from DNA testing these surnames should all localise back to a specific area in Ireland. In essence the reoccurring surname matches identified in **Table 1** will indicate in which of these 4 areas the Genetic Homeland will be found.

There are a large number of Gaelic Irish Surnames with whom the test subject shares ancestry (Table 1). This is complicated by the fact that many of his reoccurring genetic matches are to common Irish surnames; O'Brien, Donoghue, Kelly, O'Connor, Callaghan, and Kennedy. However by plotting where these Gaelic surnames occur in Ireland one can see an association with the southwest, see **Figure 2**. This is in contrast to the northern half of the Country where 3 of the 4 Clans that use the Hart surname are found. After O'Brien (and its spelling variants), Hogan stands out as a genetic match. Hogan is important as this Clan is associated with a single geographical area in Ireland, meaning that there was a single Clan in Ireland that used the Hogan surname. Hogan is similarly associated with the ancient kingdom of Thomond (red circle), **Figure 2**.

WHERE DO THE SURNAMES THAT OCCUR AS THE CLOSEST GENETIC MATCHES ORIGINATE?

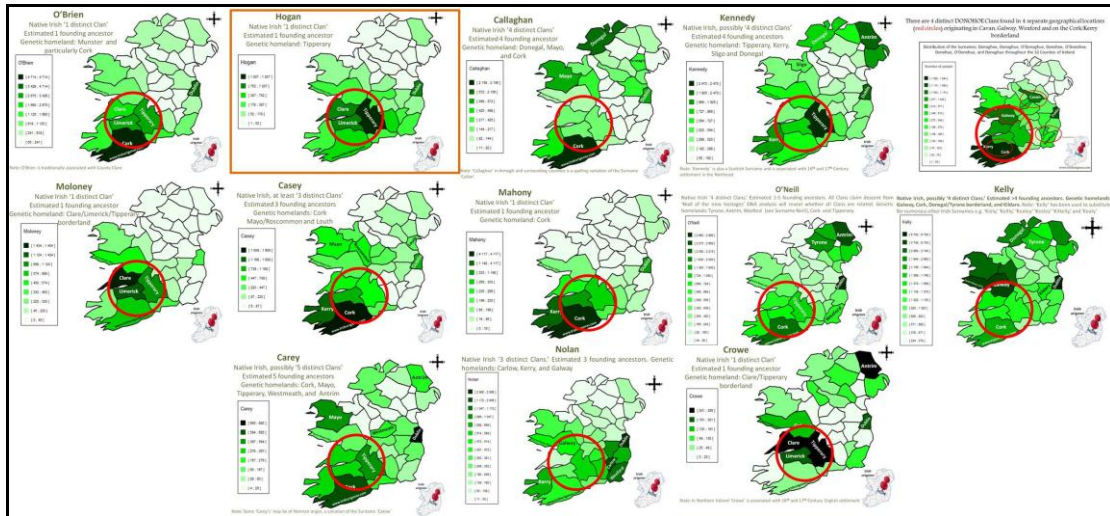


Figure 2: Surname distribution mapping of the surnames that reoccur as a genetic match to test subject 'Hart.' There is a clear association among these surnames with the southern half of Ireland in contrast to the northern half of the Island where 3 of the 4 Hart Clans are to be found. The high number of genetic matches to Hogan's is particularly important (orange box) as this surname is associated with a single location within the ancient Kingdom of Thomond (red circle).

Land, like the surname and Y chromosome is typically passed from father to son. Given the importance of land to the Irish psyche and the fact that Ireland was an agrarian society in 1911, farmers in Ireland could still be found farming the same land that their ancestors had settled hundreds if not thousands of years ago. The Irish Origines 'Surnames of Ireland Map' shows the location where farmers with a particular surname cluster in 1911. By placing pins on each surname that reoccurs as a genetic match to the test subject 'Hart' one will see a pattern emerge with the pins localising to a specific area, see **Figure 3**. This does indeed occur. The majority of the pins fall within the ancient territory of Thomond, (Limerick, Clare and northern Tipperary). Within this area the pins cluster in the north-western tip of Tipperary along the border with County Clare, it is within this area that the 'Hart' Genetic Homeland will be found.

MEDIEVAL THOMOND

When one views the Irish Origines Clan Territories of Ireland Map which shows the areas under the control of over 400 of the most prominent Clans and Families in medieval Ireland there is a striking association with northwest Tipperary. Within this area, all of the prominent Clans are represented in the test subject 'Hart's' DNA results including; O'Brien, Hogan, Butler, Tierney, and Kennedy, see **Figure 4**. There are also singularly occurring genetic matches to Cerny (Kearney) and Ryan (Rines) which are among the other prominent Clans in this area.

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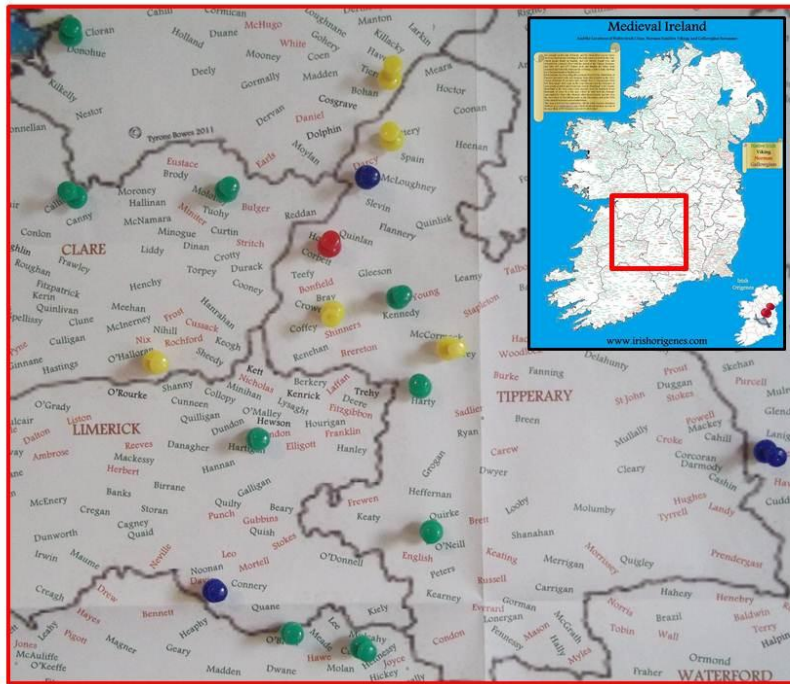


Figure 3: Pinpointing the ‘Hart’ Genetic Homeland. By sticking a pin on each reoccurring surname as revealed by commercial DNA testing onto the Irish Origenes Surnames of Ireland Map one can see an association with the ancient Kingdom of Thomond. The pins cluster around the Hogan surname (red pin) in the northwest of Tipperary along the Clare border (Green pins; 37 marker surname matches, yellow pins; 25 marker DNA matches, Blue pins; Norman surnames). Note: Callaghan/Callahan may be a spelling variation of Thomond ‘Callinan.’

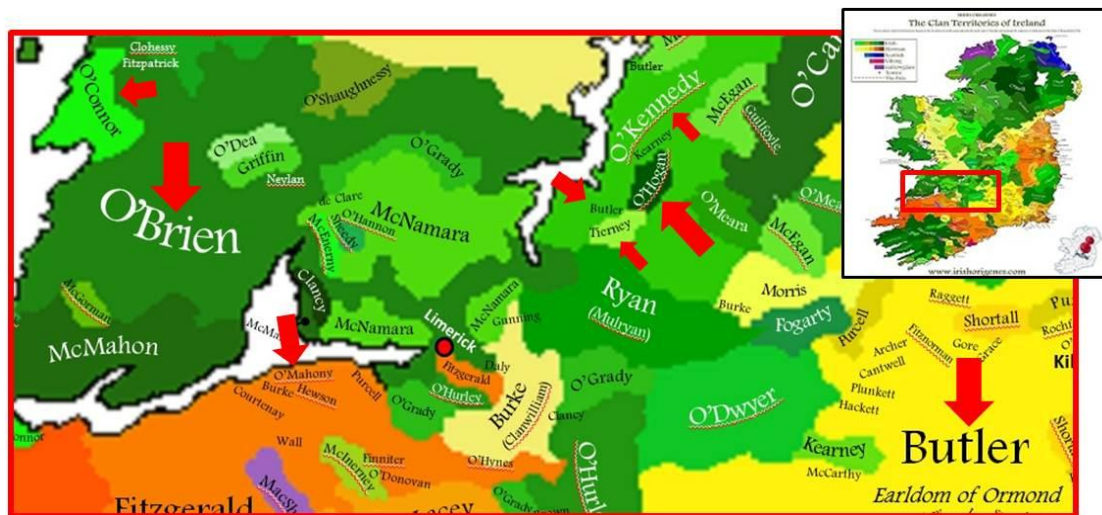


Figure 4: Medieval Thomond from the Irish Origenes Clan Territories of Ireland Map. For hundreds of years the O’Brien’s were the undisputed lords of Thomond. O’Brien territory extended into modern day Tipperary and bordered O’Kennedy Country, within which the O’Hogan Clan had carved out a niche. Many of the prominent Clans in O’Kennedy Country are represented in test subject Hart’s DNA test results (red arrows indicates a Clan that appears as a reoccurring genetic match).

THE THOMOND HART'S; HARTIGAN'S OR HARTY'S IN DISGUISE?

In Thomond the Hart surname is derived from either Harty or Hartigan, all three may be an Anglicisation of the same original surname derived from the Gaelic personal name 'Art.' To examine the relationship one must examine where Farmers with the surnames Hart/Harte, Harty and Hartigan cluster in 1911, see **Figure 5**. There are only 6 Farmers (heads of household) with the surname Hart or Harte in Limerick, Clare, and Tipperary in 1911. In comparison there are 34 'Harty's' concentrated in northern Tipperary and 48 'Hartigan's' concentrated in Limerick and physically separated from each other by the Silvermine Hills.

The Hartigan's and Harty's may be genetically related and the occurrence of a single Hartigan genetic match may support this theory. However the presence of Harty's in Limerick (and clustered around Hartigan) would indicate that Harty has been used as a shortened form of Hartigan. The concentration of Harty's in northern Tipperary indicates that the test subject 'Hart's' ancestry is associated with this group.

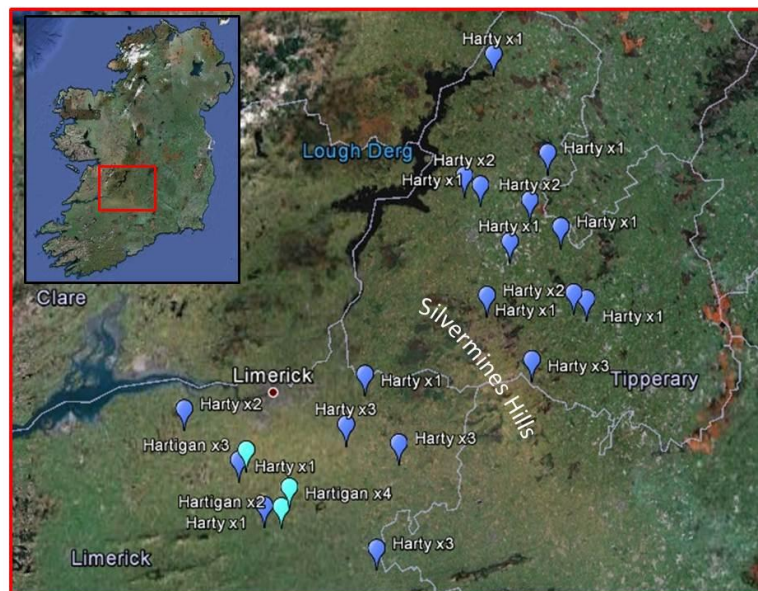


Figure 5: The Hartigan and Harty Farming community in 1911. Each pin represents a Farmer(s) with the Hartigan (pale blue) or Harty (blue) surname. Harty is found predominantly in North Tipperary and physically separated from their possible relatives the Hartigan's by the Silvermine Hills. Harty in Limerick may simply have arisen as a shortened form of Hartigan.

EVIDENCE IN THE PLACENAMES

Ireland is quite unique in that many of its placenames reflect its ancient inhabitants. An examination of north Tipperary and neighbouring Limerick reveals many placenames which refer to surnames that reoccur as genetic matches to the test subject Hart. These placenames cluster near the banks of Lough Derg in north-western Tipperary, see **Figure 6**. This area is within Clan Hogan territory whose centre was Ardcroney Castle (castle number 818 on the Castles of Ireland Map). It is no surprise therefore that many placenames south of Ardcroney castle refer to this Clan including Hogan's pass bridge and two sites called Ballyhogan (Hogan's village). Close to a Ballyhogan is Ballyartella bridge which in modern Gaelic (Baile Uí Artaíle) translates as ***O'Hartley's*** town bridge (**Figure 6**).

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The smallest unit of measure of ancient land division in Ireland is the Townland. Townlands often refer to an identifiable landmark in the area such as a mountain, bog, forest, church, fort, or village. A closer inspection of Ballyartella Bridge identifies Ballyartella townland (**Figure 7 and 8**) and Ballyartella Tower House (**Figure 7 and 9**), both situated across the bridge on the west bank of the river Nenagh.

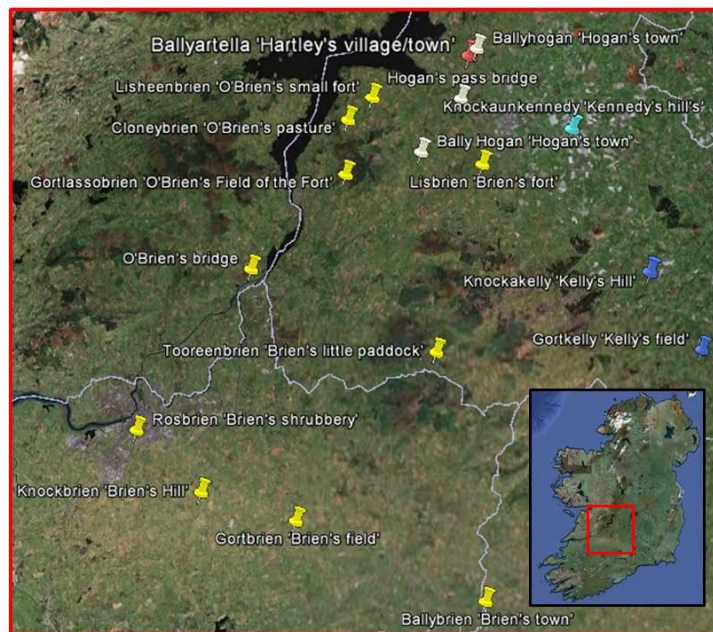


Figure 6: Placenames associated with test subject Hart's reoccurring genetic matches. Pins indicate placenames associated with surnames from test subject Hart's DNA results, which reach their highest density in northwest Tipperary. It is in this area close to Ballyhogan, where one finds a bridge called Ballyartella (**red pin**) or 'Baile Uí Artaíle' meaning O'Hartley's town bridge (**Yellow pins**; O'Brien placenames, **Blue pins**; Kelly placenames, **pale blue pins**; Kennedy placenames, white pins; Hogan placenames).

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Figure 7: Ballyartella; test subject Hart's Genetic Homeland. The O'Hogan Clan with whom the test subject shares common ancestry gave their name to many placenames within their ancient territory. Near Ballyhogan one finds Ballyartella bridge, towerhouse, and townland. These areas have been named after the test subjects founding 'Art' ancestor and are clear evidence that the Hartley's/Harty's were associated with this area for 100's if not 1,000's of years.



Figure 8: The River Nenagh as viewed from Bartella Bridge which dissects Ballyartella and Ballyhogan townlands. Ballyartella bridge is nearly 400 years old, Ballyhogan town can be viewed in the distance on the east bank.



Figure 9: The remains of Ballyartella Tower House on the west bank of the river Nenagh next to Ballyartella bridge (inset; red arrow). It is not known who built the Towerhouse but it was reportedly in the possession of the Butler's of Ormond in the 17th Century. The Butlers figure prominently as a genetic match to the test subject Hart.

How to confirm a pinpointed 'Genetic Homeland'

Approximately 1,000 years ago when surnames became common the 'Uí Artaíle' occupied the west bank of the Nenagh river in a townland to which they gave their name. They were surrounded by their relatives; the O'Brien's (lords of Thomond) to the west and south and the Hogan's across the river Nenagh to the east. The DNA evidence also shows shared ancestry with the Norman Butlers who controlled the nearest town of Nenagh in the southeast. Presumably these 'Butler' genetic matches are representative of non-paternal events with the most prominent Norman family in the area.

The destruction of the old Gaelic order in the 17th and 18th Century was followed by the Anglicisation of Ireland. Placenames and surnames were anglicised, in north Tipperary the Uí Artaíle became 'Harty,' which in turn over time became Hart. The Harty's still live in north Tipperary and to confirm Ballyartella townland as the Genetic Homeland of the 'Uí Artaíle' will require Y-DNA testing of Farmers with the Harty surname who currently live in North Tipperary.

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](#)

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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.