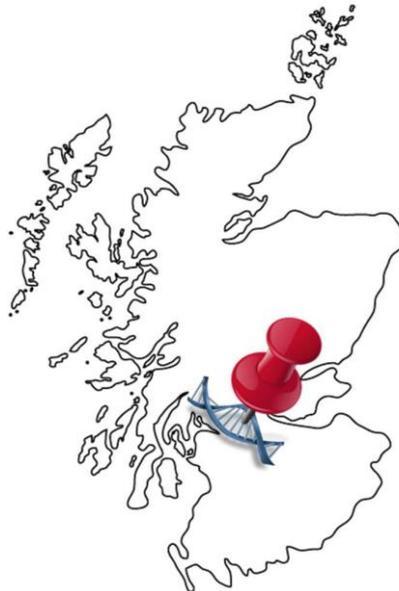


Pinpointing the SMITH Genetic Homeland

A Scottish Case Study

www.scottishorigenes.com



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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 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 'Smith' was living in close proximity to others with whom he was related but who assumed other surnames like Harper and Wright. Given that 1,000 years have passed since surnames were adopted, there will be many descendants of these individuals some of whom will today undergo commercial ancestral DNA testing. Hence the surnames of one's medieval ancestor's neighbours will be reflected in today's DNA test results. Early 19th century census data shows that Scottish surnames could still be found concentrated in the Counties from which they originated. In this manner one can examine surname distribution maps (for the surnames that appear as a DNA match) and pinpoint a '**Genetic Homeland.**' The Genetic Homeland is the small area 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 identified location. The Case Study below will detail how I made sense of the test subject 'Smith's' Y-DNA results and will provide a checklist at the end of the report on how to proceed in identifying your own Genetic Homeland.

Notes of caution!

1. In Ireland each of the estimated 1,500 distinct Clans had 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 with a surname that has arisen as a result of what are called 'non-paternal events' usually a result of adoptions or infidelity. Since Scotland adopted a similar Clan based society these scientific findings can be applied to Scotland and people with Scottish ancestry.
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 Scottish ancestor was originally an Anglo-Saxon settler, Viking raider, or 12th Century Norman your DNA results will reflect earlier English, Welsh and possibly Scandinavian origin. One must approach this process with an open mind!

Interpreting the Y-DNA test results

To identify a Genetic Homeland one must first identify 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 'Smith' are shown in **Figure 1**.

SURNAMES THAT REOCCUR AS A GENETIC MATCH TO TEST SUBJECT SMITH FROM 67 MARKER Y-CHROMOSOME DNA TESTING

Test subject	67 marker level								37 marker level					25 Marker level		
	exact	-1	-2	-3	-4	-5	-6	-7	exact	-1	-2	-3	-4	exact	-1	-2
Smith	-	-	-	-	Harper(x17)	-	-	-	-	-	-	Wright(x2)	-	-	Smith(x3)	-

Figure 1: Reoccurring surname matches for test subject Smith. Surnames appear at the point at which they first occur as a genetic match e.g. the first match to an individual called Harper occurs at 63/67 markers although not all Harper's may match at that level. Figures in brackets represent the number of individuals with a particular surname who occur as a genetic match. Black font indicates surnames with multiple ethnic origins.

The test subject Mr Smith is a genetic match to other 'Smith's,' but only at the 25 and 12 marker level, see **Figure 1**. None of these genetically matching Smiths have tested beyond the 25 marker level and one must therefore assume that Mr Smith has retained the surname of a 'Smith-Adam' who lived approximately 1000 years ago (when surnames became common). Smith is the most common surname in England and Scotland, however Mr Smith's genetically reoccurring surname matches (Figure 1) as a snapshot of his medieval ancestor's neighbours can be used to pinpoint where his Smith-Adam lived. This is because these surnames will have arisen among a group of related individuals living in a very specific location, plot where they occur from early census data and you'll reveal a common area of association (where his Smith-Adam lived). However, 1881 surname distribution mapping for the UK reveals many areas of common association for Smith, Harper, and Wright, see **Figure 2**.

Crucially Mr Smith has a limited number of singular genetic matches, these are to individuals with the surnames Fillmore (exact), Arkles (-4/37), and Crawford (-4/37). These singular matches are most likely non-paternal events (adoptions, infidelity) that have occurred through the ages between neighbouring families, which can therefore also be useful in linking one's direct paternal ancestors to a specific area at a specific time ([see Foy Case Study](#)). The Fillmore match is a relatively recent event occurring anywhere within the last 200 years and hence cannot be used to help pinpoint a Smith-Adam (who lived approximately 1000 years ago). An examination of early census data for the surname Arkles reveals that it is too rare to yield any useful information. In contrast the surname 'Crawford' is quite common and the genetic relationship corresponds to the time when surnames first appeared (-4/37 = 800-1000 years ago). Crawford is also found almost exclusively within Scotland and particularly within Scotland's west coast where one also finds Smith, Harper, and Wright, see **Figure 2**.

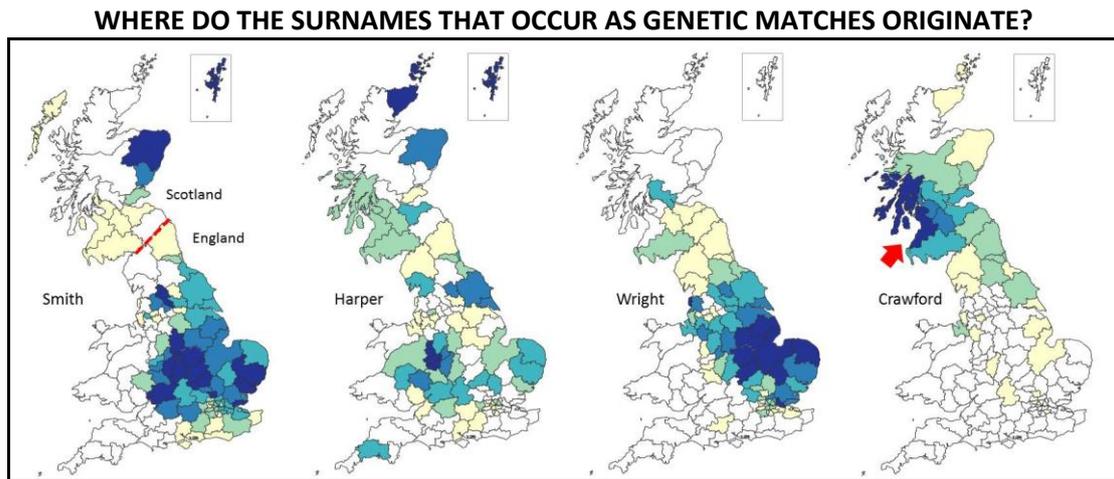


Figure 2: 1881 Surname distribution mapping reveals a tentative Scottish ancestral link. Although Smith may be of English or Scottish origin it does occur in the Scottish southwest where Harper, Wright, and particularly Crawford are concentrated (**red arrow**).

Pinpointing the Scottish Smith Genetic Homeland

The method of using reoccurring surname matches as revealed by commercial ancestral Y-DNA testing to pinpoint a Genetic Homeland works by exploiting the link between the Y chromosome, surname, and land, which are typically passed from father to son. In the absence of a link to the land the process becomes much more difficult. Hence one must determine whether the Smith's of southwest Scotland had a link to the land by examining where farmers with this surname were found. The earlier in time that a link can be established the better as over time (particularly in the UK due to the industrial revolution) the link with the land is lost.

By examining the number of farmers with the surnames Smith, Harper, and Wright in the Scottish southwest one sees a paternal ancestral link with Ayrshire emerge, see **Figure 3**. The paternal ancestral link to Ayrshire can be further explored by examining where within Ayrshire the Smith, Harper, and Wright farmers lived, the area where these communities overlap or co-localise will reveal precisely where the Smith Genetic Homeland will be found, see **Figure 4**. In 1841 the Smith, Harper, and Wright farmers cluster in closest proximity just east of Ayr town in what is today south and east Ayrshire.

‘Smith’ Case Study

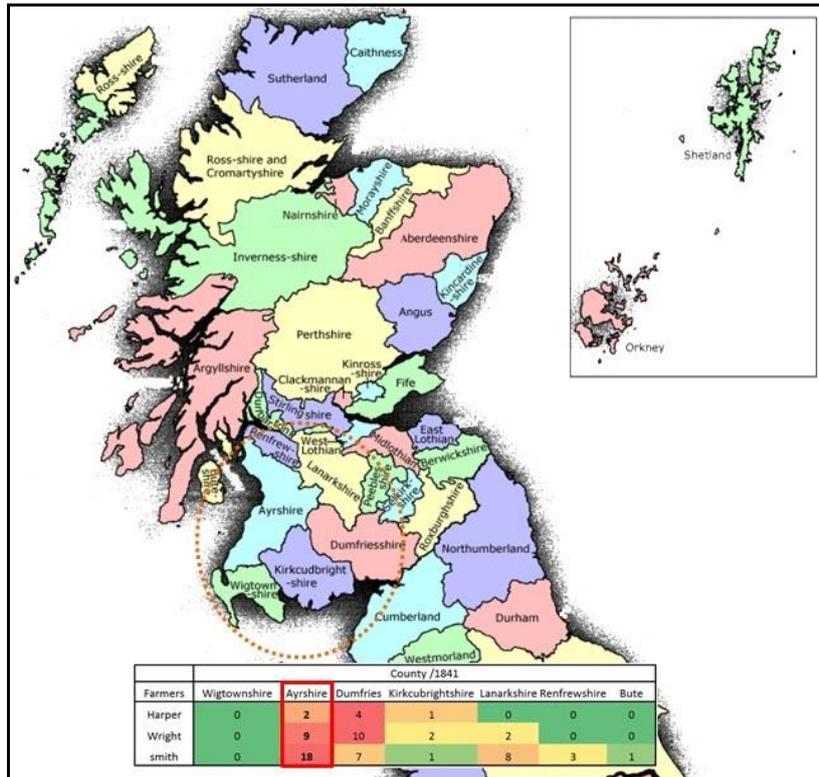


Figure 3: The 1841 Smith, Harper, and Wright farming communities in southwest Scotland. Within southwest Scotland (orange broken circle) the Smith, Harper, and Wright farmers are found concentrated in Ayrshire (red box). Note Smith numbers are based on male farmers aged 70 +/-10 years in 1841.

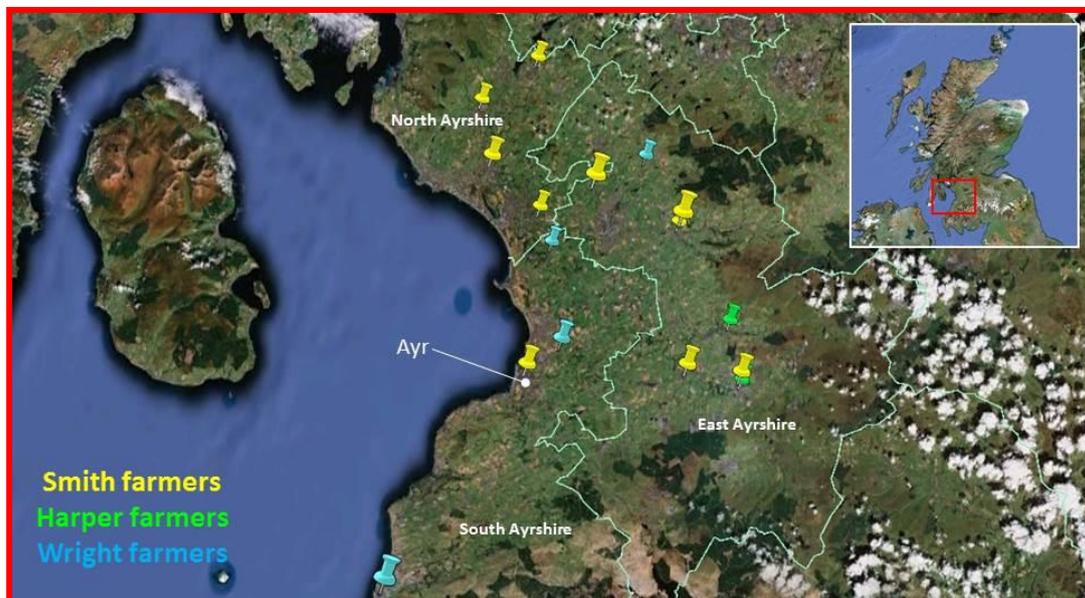


Figure 4: The Ayrshire Smith, Harper, and Wright farming communities in 1841. When one places pins where farmers with the surnames Smith, Harper, and Wright are found within Ayrshire in 1841 they co-localise just east of Ayr town in what is today south and east Ayrshire. Pin size is indicative of farmer frequency.

'Smith' Case Study

The Clan system in Scotland has been extensively recorded and documented and is beautifully illustrated in Bartholomew's Clan map. This map features the lands, or the areas of influence of the most prominent Clans and Families in Scotland from around 500 years ago. Almost everyone with Scottish ancestry will show shared ancestry (as revealed by commercial ancestral DNA testing) to at least one of these prominent Clans and families. Although there is no mention of the Smith, Harper, or Wright families, the Crawford's (Craufurd) are shown in territories to the north and south of Ayr town, see **Figure 5**.

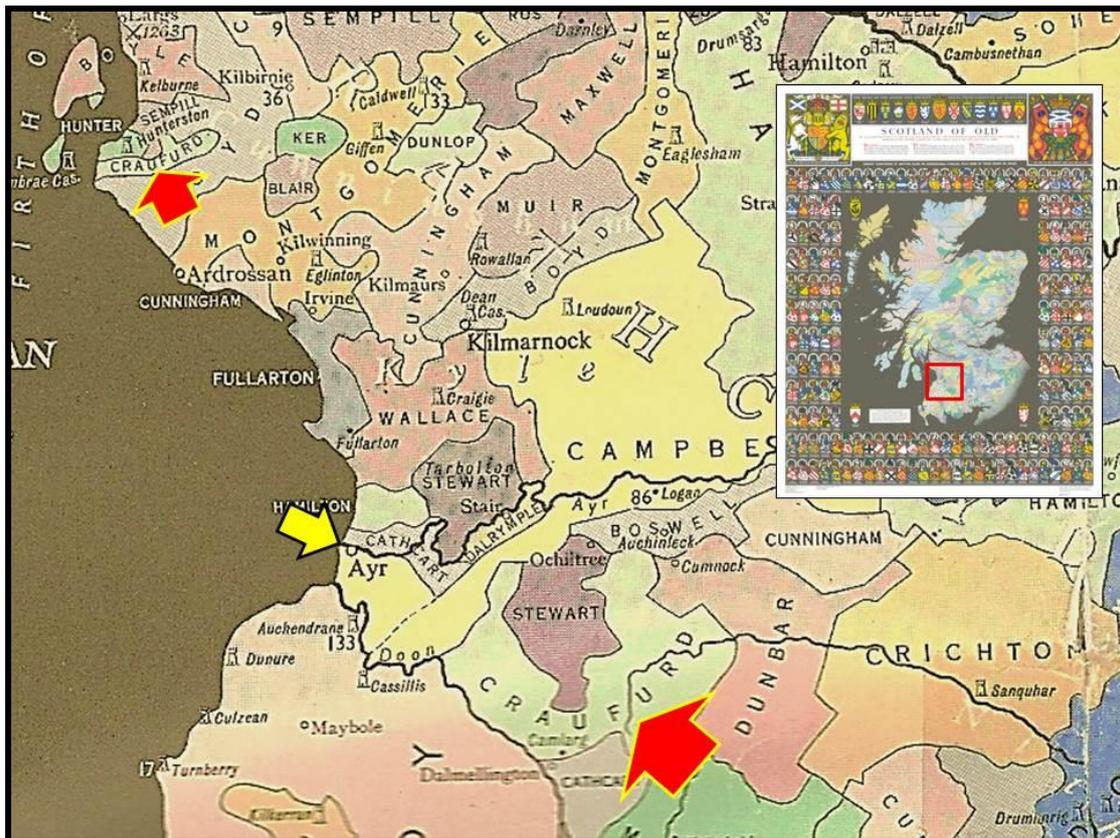


Figure 5: 15th Century Clan map of Ayrshire. The Smith's, Harper's, and Wright's do not appear on this beautifully detailed Clans territories of Scotland map. However the Crawford's (Craufurd) who appear as a singular genetic match were a prominent family who occupied territory (red arrow) to the north and south of Ayr town (Yellow arrows).

The Smith Genetic Homeland evidence in its history and placenames

Evidence for one's ancestor's long association with an area can be found in its placenames. An examination of modern South and East Ayrshire (where the Smith Harper, and Wright farmers co-localise in 1841) reveals placenames associated with the Smith surname including Smithston and Smithfield, see **Figure 6**. In the surrounding area one finds placenames associated with his genetic relatives including Harpercroft, Harperland burn, Wriighthill, Wright's Island, Craufurdston, Craufurdland-water, and Craufurdland-loch, see **Figure 6**.

The Smith, Harper, and Wright farming community in 1841 are found within a 5 mile radius of the village of Ochiltree, and it is in the area surrounding this village that Mr

'Smith' Case Study

Smith's Genetic Homeland is to be found. It is here that his Scottish Smith 'Adam' lived approximately 1000 years ago when he first picked his surname surrounded by relatives who chose other surnames like Harper and Wright. It is here that his ancestors lived for 100's of years, leaving their mark in the placenames and in the DNA of the current inhabitants, and it is where his distant relatives still live.

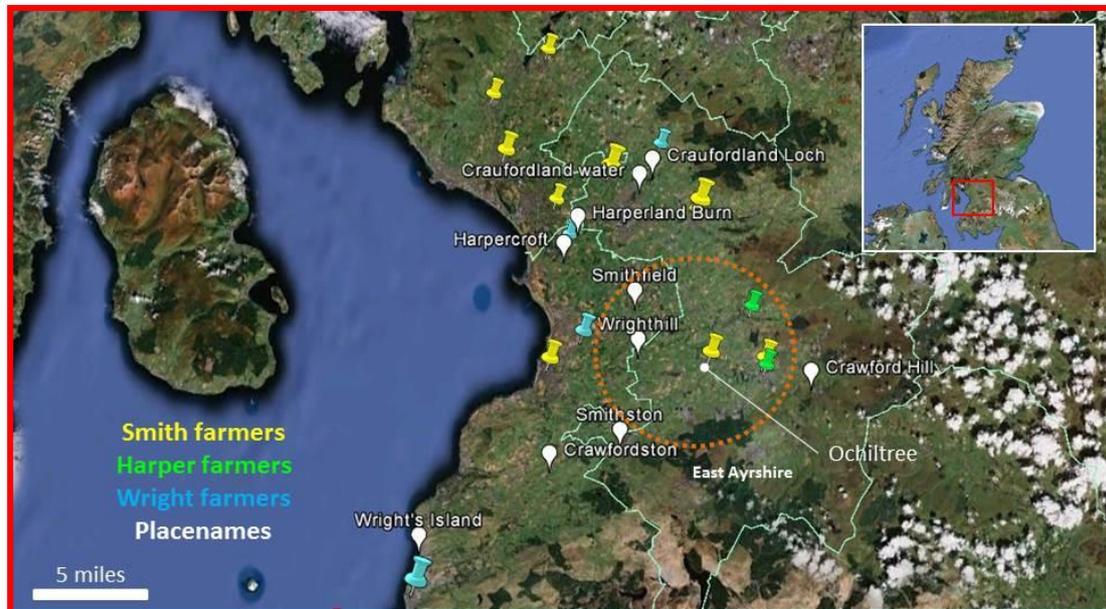


Figure 6: Mr Smith's Genetic Homeland centred upon the village of Ochiltree in east Ayrshire. In 1841 farmers with surnames that appear as genetic matches to Mr Smith clustered around the village of Ochiltree. Surrounding Ochiltree one finds references in the placenames (white balloons) to Smith, Harper, Wright, and Crawford's, including Smithston, Smithfield, Harper croft, Harperland burn, Wrythill, Wright's island, Crawfordston, Crawfordshill, and Craufurdland loch. Ochiltree is also situated close to the medieval feudal lands of Clan Craufurd.

How to confirm the Smith Genetic Homeland

Confirmation of the Genetic Homeland will require the DNA testing of farmers with the Smith surname currently living in the area surrounding Ochiltree. Smith is quite a common surname and there may well be a Smith farming community still residing in this area.

**HAVE YOU HAD A Y-DNA TEST? THEN 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 80% success rate. If in the unlikely event that I cannot pinpoint your
Genetic Homeland I will explain why and I will not charge you.**

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 [Scottish Origenes homepage](#).
2. PublicProfiler World names database.
3. Census data (earlier the better).
4. Google Earth.
5. Scotland of Old, Clan Names Map.