

Had a commercial ancestral DNA test? Then contact Dr Tyrone Bowes
tyronebowes@gmail.com for a FREE CONSULTATION

If you believe your Millers are connected to this line then please contact Mr
Miller: tmiller230@aol.com

Case Study

Pinpointing the Miller Paternal Ancestral Genetic Homeland

www.scottishorigenes.com



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

Dr Tyrone Bowes
27th November 2014

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 many 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 inherit the 'MacGregor' surname was living in close proximity to others with whom he was related but who inherited other surnames like Buchanan, Drummond, Bain and Campbell. Given that 1,000 years have passed since paternally inherited surnames became common, 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 ancestors neighbours will be revealed in today's Y-DNA test results.

Early 19th century census data demonstrates that Scottish surnames could still be found concentrated in the areas from which they originated. 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 ones '**Paternal Ancestral Genetic Homeland.**' The 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 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 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 typically reflect one's ancestor's neighbours from around 1,000 years ago. As a result, if one's Scottish ancestor was descended from an Anglo-Saxon settler, Viking raider, or 12th Century Norman one's DNA results will reflect earlier English, Welsh, French, and possibly Scandinavian origin. One must approach this process with an open mind!

Interpreting the Y-DNA Results

To pinpoint a paternal ancestral genetic homeland one must first identify the surnames that appear as genetic matches. Those surnames, particularly ones that recur throughout one's YDNA results will typically reflect the surnames of ones medieval ancestor's neighbours. Results for test subject 'Miller' are shown in **Figure 1**.

Test Subject	Haplogroup	YDNA Test Results								
		111 markers			67 markers					
		-1	exact	-1	-2	-3	-4	-5	-6	-7
Miller	R1b-S695	Miller(x5)	-	-	-	Valentine(x5) ³	McGregor(>30) Tuten(x2) ³	Buchanan(>10) Drummond(x3) Hanby(x2) Logan(x3) Norton(x2)	Bain(x6) Bennett(x3) ¹ Boyle(x4) ² Cameron(x5) Dundas(x3) McKenzie(x5) Robertson(>10) Rock(x2) Shively(x2) Stephenson(x2) Urquhart(x2)	Arnett(x2) Allan(x2) Anderson(x4) ² Bourland(x2) Boyd(x2) Burns(x2) Calvert(x2) Campbell(>15) Chisholm(x3) ¹ McLean/McLain(x6) McCormick(x2) Cowan(x2) Davidson(x3) ² McDonald(>15) Ferguson(>10) Hamilton(x3) ² Harvey(x2) McIntosh(x4) ¹ Johnson/Johnston(x7) McKinley(x2) McLaren(x7) McMickle(x2) McPherson(x8) Stedman/Steadman(x8) ² Stewart(>10) Stirling/Sterling(x5) Thompson/Thomson(x6) watson(x5) Welsh(x2) Wilson(x2)
Estimated time to shared ancestry/years		0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800	

Figure 1: Mr Miller's genetically recurring surname matches. Surnames are shown at the point at which they first occur as a genetic match, for example the first match with another individual called Miller occurs at 110/111 markers, but not all Millers will match at that level. In brackets are the numbers of individuals with a particular surname that appear as a genetic match. Coloured font indicates the ethnicity associated with a surname, *Scottish*, black font indicates multiple associated ethnicities. ¹Most of these matches occur at the 12 marker level and the shared ancestry may precede the appearance of surname by many hundreds of years. ²Members of the same close family recruited for YDNA testing and excluded from further analysis. ³Scottish Valentines are MacGregors in disguise.

Upon Y-DNA testing Mr Miller was a genetic match to other individuals called Miller who tested independently of him, see **Figure 1**. These genetic matches would indicate that he is either part of the 50% of individuals who after an estimated 1,000 years have retained the surname of their founding ancestor; the Miller-Adam (the first to call himself 'Miler') or that his ancestor acquired the Miller surname many hundreds of years ago. The Miller surname can be of English, Scottish or European origin, however a paternal ancestral link with Scotland is uncovered by the test subjects YDNA results which revealed predominantly Scottish surnames; a number of which, including MacGregor, Buchanan, Drummond, Campbell and Cameron are associated exclusively with Scotland, see **Figure 1**.

Scottish Millers

Miller is a common Scottish surname and early census data reveals at least 12 distinct clusters of Miller farmers found throughout Scotland, see **Figure 2**. This indicated the existence of a multiple Scottish 'Miller' Clans from whom the test subject may be directly descended. Mr Miller's genetically recurring surname matches (as identified in Figure 1) as a snapshot of his ancestors neighbours from the time when paternally inherited surnames first appeared an estimated 1000 years ago, should localise to one of the areas where Scottish Millers cluster. This is because those surnames (as revealed in Figure 1) will have arisen among a group of related males living in a very specific location, plot where those surnames occur in early census data and one will reveal an area common to all.



Figure 2: Scottish Millers. Early census data reveals at least 12 distinct clusters of Miller farmers found scattered throughout Scotland. The test subject's paternal ancestry is potentially linked to one of these Scottish Miller clusters.

Mr Miller's DNA reveals a paternal ancestral link with the bordering Counties of Stirlingshire and Perthshire

The method of using genetically recurring surname matches as revealed by commercial ancestral Y-DNA testing to pinpoint a 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 amongst the farming community and since farmers in Scotland can still be found farming the lands where their ancestor lived when he first inherited his surname, or where one's ancestors first settled within Scotland, one can plot where farmers with the surnames that reappear in one's Y-DNA results cluster and identify an area common to all.

Mr Miller's closest and most frequent genetic matches are to people called Valentine, MacGregor, Buchanan, Drummond, Logan, Bain, MacDonald, Campbell, MacKenzie, Robertson, Stirling and MacLaren. By plotting where farmers with those surnames cluster in early census data it reveals an ancestral link with the bordering Counties of Stirlingshire and Perthshire, see **Figure 3**. It is only within those two Counties which are located in the Southern Highlands of Scotland that farmers with the surnames that appear in Mr Miller's YDNA results cluster in early census data. Within that area one also finds two distinct clusters of Scottish Millers, see **Figure 3**.

that it was dominated by many of the Clans that feature prominently in Mr Miller's YDNA results, see **Figure 4**. The Campbells dominated this area, together with the MacGregors, MacLarens, Drummonds, Buchanans and Stewarts; all of whom appear amongst the test subjects closest and most frequent genetic matches, see **Figure 4**. Notably these clans dominated the area between Loch Lomond and Stirling town, see **Figure 4**.

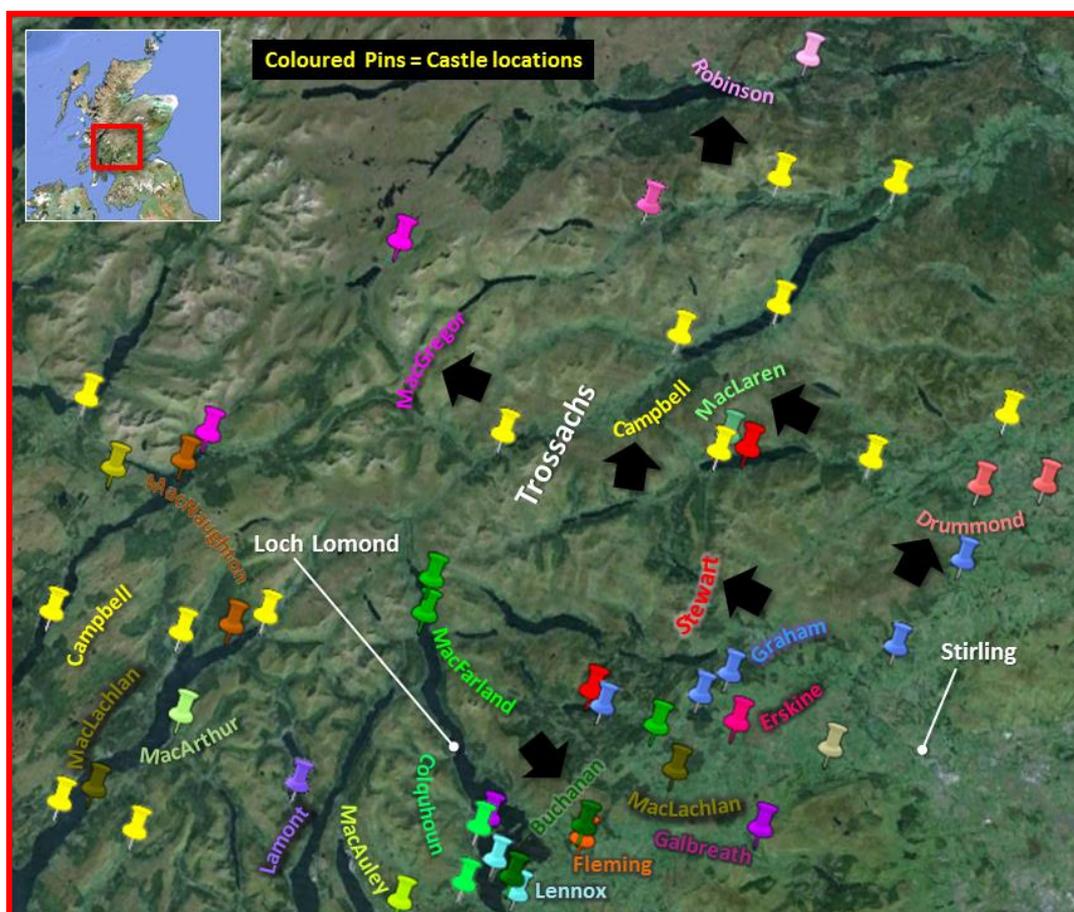


Figure 4: The Clan Territories of the Scottish Trossachs. The area known as the Trossachs occupies much of Stirlingshire and parts of bordering Perthshire and was once dominated by many notable Scottish Clans. Many of the Clans who appear as frequent recurring genetic matches to Mr Miller including the Campbells, MacGregors, Buchanans, Drummonds, Stewarts, MacLarens and Robertsons ruled this part of Scotland. Those Clans (**black arrows**) dominated the area between Loch Lomond and Stirling town.

Some Scottish Millers are MacGregors in disguise!

The Y-DNA results reveal an ancestral link with the area known as the Trossachs in Central Scotland which was dominated by the MacGregor Clan. The DNA results also reveal that greater than 30 different individuals called MacGregor appear as a close genetic match to Mr Miller (see **Figure 1**). The MacGregors were the original bad boys of the Scottish Highlands. The MacGregor Clan massacred members of the MacLaren and Colquhoun Clans in separate incidents in the 16th and 17th Centuries, see **Figure 5**. This was serious enough to get the MacGregors formally banished in 1603 by King James VI who made it a capital offence to bear the MacGregor name. The edict proclaiming the name of MacGregor 'altogidder abolished,' meant that

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those who bore the name must renounce it or suffer death (many were hanged). Clan MacGregor was scattered, many taking other surnames like Valentine. Since the Valentines also appear as a close recurring genetic match to Mr MacGregor; this indicates that Mr Miller's ancestor was originally a MacGregor who was forced to adopt the Miller surname.

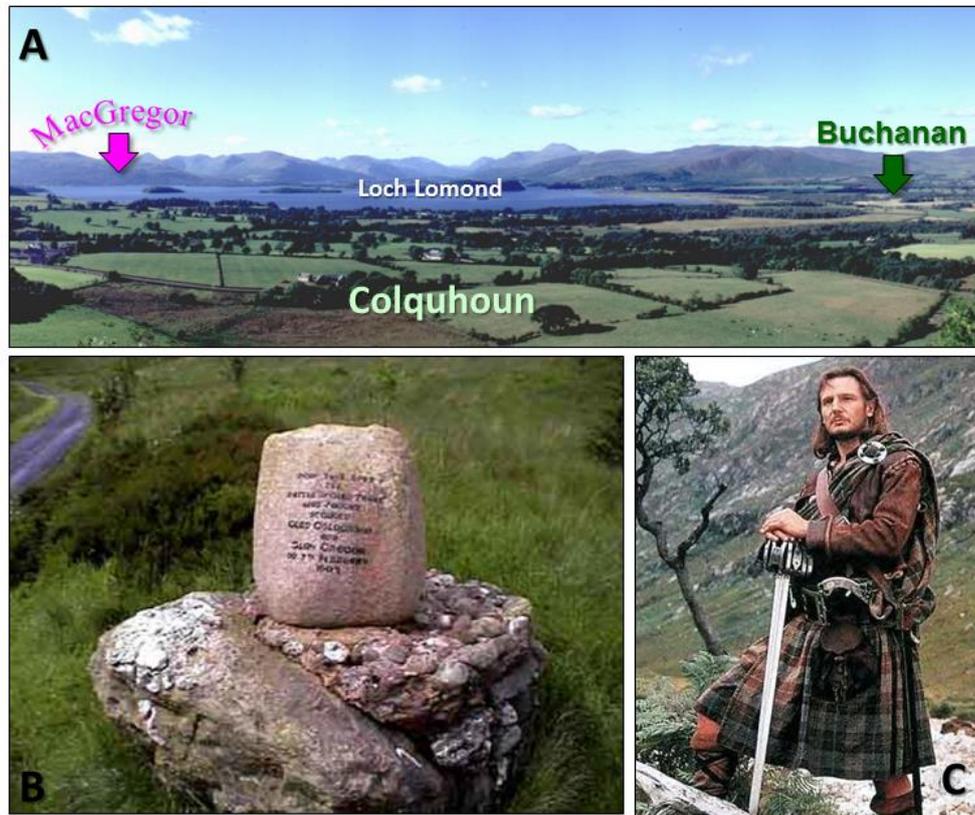


Figure 5: The Battle of Fruin Glen and the banning of the MacGregor surname. The MacGregors who appear as the test subjects most frequent genetic matches occupied territory near Loch Lomond (**panel A**). The MacGregors were outlawed after massacring their Colquhoun neighbours in 1603AD at the battle of Fruin Glen (**panel A and B**). Some of the MacGregors were forced to adopt new surnames like Miller and Valentine. Liam Neeson played Rob Roy MacGregor whose surname was recorded as Campbell on official documents (**panel C**).

Mr Miller's Paternal Ancestral Genetic Homeland

MacGregor farmers in 1841 clustered to the northeast of Loch Lomond and it is there that the test subject's paternal ancestral genetic homeland is to be found, see **Figure 6**. It is in that area that the test subject's direct male ancestor lived when he first inherited the MacGregor surname an estimated 1000 years ago. His ancestor lived surrounded by male relatives who inherited surnames like Buchanan, Drummond, Logan, Bain, MacDonald, MacKinlay, Campbell, MacKenzie, Robertson, Stirling and MacLaren. When one's ancestors have been associated with an area for long enough, they often leave evidence of their ancestral links in the placenames one finds there. The surrounding area reveals many references in the placenames to the MacGregors, see **Figure 6**. All of these Clans will also have left evidence of their long ancestral links with this area in both the history of this location and in the DNA of its current inhabitants.

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When the MacGregors were outlawed in 1603AD the test subject's direct male ancestor adopted the Miller surname. In 1841 a cluster of Millers were found in early census data close to the MacGregors on the Perthshire borderlands, given their close proximity, these may in fact be the Millers (MacGregors in disguise) from who the test subject is descended, see **Figure 6**.

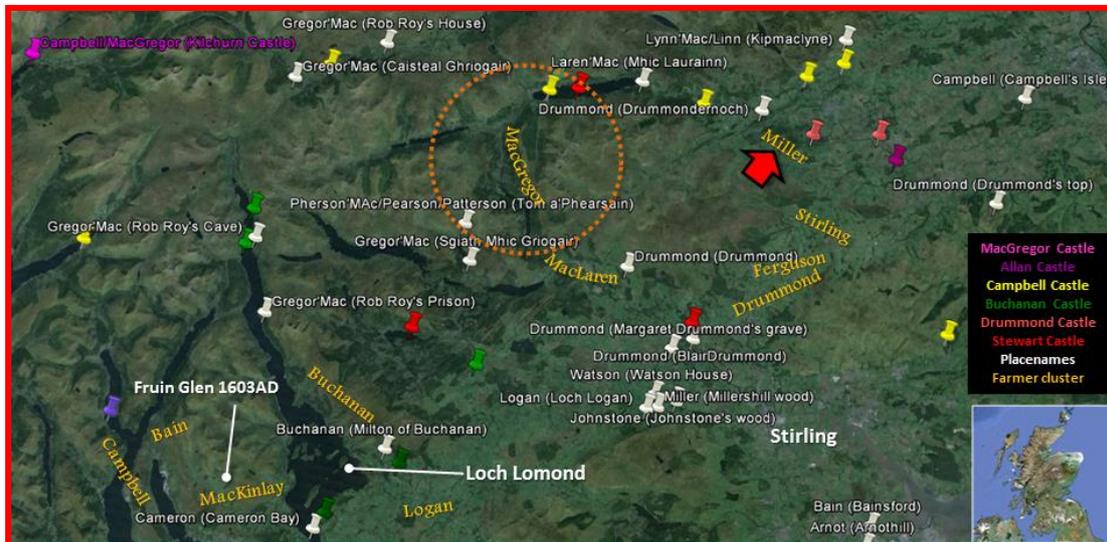


Figure 6: Mr Miller's Paternal Ancestral Genetic Homeland. Mr Miller's paternal ancestral genetic homeland lies to the northeast of Loch Lomond in the area known as the Trossachs (orange broken circle). It is there that his MacGregor founding ancestor lived surrounded by genetic relatives with surnames like Campbell, Buchanan, Logan, Bain and Drummond. His MacGregor ancestors have left lots of evidence in the surrounding castles and placenames of their long ancestral links with this area. One also finds many castles and placenames associated with their genetic relatives. At some point after 1603AD the test subject's direct male ancestor changed his surname to Miller. A cluster of Miller farmers could be found close by (red arrow); only YDNA testing will reveal whether those Millers are also MacGregors in disguise and therefore the location where the test subjects ancestors settled after adopting the Miller surname.

SNP EVIDENCE OF A PATERNAL ANCESTRAL MACGREGOR CONNECTION

Full YDNA testing reveals that Mr Miller is positive for a SNP known as S695 which appears to denote MacGregors who are directly descended from the MacGregor-Adam (the first to take that surname). SNP S695 is dated to between 1200-1250AD which also fits with the putative time frame in Figure 1. This is conclusive proof that Mr Miller is descended from a MacGregor. Since Mr Miller is a close genetic match to the current chief of the MacGregors, his ancestor may well have been a close relative of Alasdair MacGregor of Glenstrae who was the Chief of the Clan in 1603.

How to confirm a pinpointed 'Paternal Ancestral Genetic Homeland'

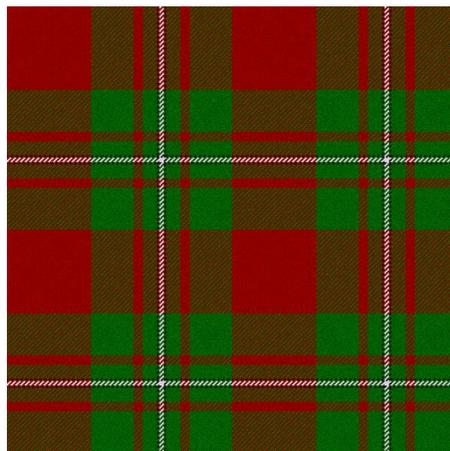
- Confirmation of the paternal ancestral genetic homeland will require the commercial ancestral Y-DNA testing of MacGregor farmers who currently live in the Trossach area of Scotland.

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- YDNA testing of Miller farmers on the Perthshire and Stirlingshire borderlands will confirm whether they are indeed the descendants of a MacGregor and the most recent source of Mr Miller's Y chromosome.



Royal is my Race
(Clan MacGregor motto)



Clan MacGregor Tartan