

DNA: The Origins of Clan Buchanan and Tracing Your Heritage

In this article some of the recent developments within genetic genealogy are documented. These are also applied to the Buchanan line to explain what has been learned regarding Buchanan ancestry to date, and what may be possible in the future.

The Buchanan DNA project at Family Tree DNA has been underway now for ten years under the guidance of Alex Buchanan (abuchana@inet.net.au). The project has over 150 members and compares the Y chromosomes of Buchanan males to determine the relatedness of these individuals.

A portion of the male Y chromosome is passed intact from fathers to sons without any recombination. As time passes, small random mutations occur in this intact portion across different family lines, although they share descent from a common male ancestor. It is by studying the patterns of mutations in the coding of this part of the chromosome, that we can determine how related one particular male is to another.

To date the project has uncovered some interesting information. Within the Buchanan group there are various sub-groups of males. There is in particular one strong grouping of Buchanans who form by far the largest contingent. Within this core group lie those Buchanans who are descended from the chiefly line. There are amongst this group, those who have documented pedigrees linking them back to specific chiefs of the line.

Some very important information has come to light through the early testing of Short Tandem Repeat mutations (STRs) on Buchanan Y chromosomes. It would certainly seem, for instance, that the old tale of an origin associated with descent from Anselan O'Cathain son of a king of Ulster is an origin myth. Certainly the Buchanan descendants and the MacAuslands (closely related) share no ancestry in common with the O'Kanes of Ulster more recently than a common bronze-age ancestor likely on the European continent. This account may have been concocted during the 11th century when Gaelic reached its zenith in Scotland. There are a number of clan chiefly lines who traditionally have claimed descent from an Irish lineage where this has been shown not to be the case via DNA studies.

The initial results from testing Short Tandem Repeat mutations (STRs) have also shown some level of relatedness with other male lines with shared ancestry from further back in the past, before the creation of surnames. It will no doubt be a surprise to many that our most recent cousins from a shared male ancestor are those of documented chiefly lineage in the MacGregor clan. Sir Malcolm MacGregor of MacGregor appears as a match for myself at the 111 marker level.

STR testing has been a useful start in that it gives some inference about relatedness and it has shown us something of our origins of which we were not previously aware. STRs however are a limited method of looking at shared ancestry and are prone to instability.

In the field of DNA in the last few years a new means of examining relatedness through the Y chromosome has been discovered, using Single Nucleotide Polymorphisms (SNPs). The SNP is a random mutation that is irreversible on a specific location within the chromosome. On average, about every 90 years/2-3 generations a new SNP mutation will occur within the Y chromosome. By comparing these mutations to other Y chromosomes, it is possible to tell how closely related individuals are and, very importantly, to fit separate individuals together in a sequence where the SNPs can be mapped to form family trees.

Each and every male out there has a long series of these SNPs which they share with other males in the population depending on the level of relatedness. More recently occurring SNPs can be used to track down close relatives, and older SNPs can be used to figure out which particular population groups individuals descend from. It should be noted that individual SNPs can be aged and the accuracy of these estimates increase when more people's test results are added to the calculations.

The discovery of the SNP has led to massive potential for tracing ancestry in the male line. Very recently Next Generation Sequencing (NGS) technologies have become available which can sequence the Y chromosome and find all of an individual's SNPs. With this new technology for discovering SNPs, it is possible to map how all the male lineages in the world fit together, both at the macro level comparing populations and migrations, and at the micro level comparing interrelatedness within a given family.

There are a number of NGS technologies out there and to date a number of Buchanans have undertaken testing using the Family Tree DNA Big Y and a number are currently in the process of testing with Full Genomes Corporations, Elite 2, which examines even more of the male genome. The Big Y test discovers an average of one SNP every 120 years whereas the FGC test uncovers approximately one every 90 years.

The following is a brief synopsis of what we have learned thus far about the Buchanan chiefly line via Next Generation Testing of SNPs.

The story of the Buchanan chiefly line begins with the R1b haplogroup. Our ancestors migrated across Europe coming from the Eastern steppes and Siberian planes somewhere between 3,000 to 2,500 years BC. The spread of the particular SNPs associated with these ancestors has coincided with the archaeology of the Bell Beaker people. These ancestors had access to bronze tools and other resources such as the wheel, and seem to have usurped positions of power across much of Europe. This occurred during a period of climate change which seemed to unsettle the indigenous population.

Somewhere in the bronze-age, between 2,500 and 2,000 years BC, the direct male ancestor/s of the Buchanans migrated into the British Isles, forming a component of the first people who came to the shores after the original hunter gatherers and the first farmers. It is likely that our ancestors spoke a dialect of P Celtic. These people are regarded as the "insular celts".

The particular line associated with the chiefs of the clan has survived only via father to son for thousands of years after the original ancestor came to the British Isles. At some stage in the Roman age in the early centuries AD, something happened where this line came into a position of power and suddenly a great many lineages successfully thrived and grew. This particular grouping includes the chiefly lines of a number of other highland clans – MacGregors, MacPhersons, MacLarens, MacRaes, and Campbells (others may yet emerge as time goes on) and members from a great many others. The main clan names associated with this grouping are clustered around Loch Lomond and into Perthshire and scattered heavily along the west coast. The SNP associated with this ancient Scottish line is known as L1065 and these males account for some 10-15% of the modern population.

The core Buchanans who have tested to date are displayed on what is known as the "big tree", a vast graphic that has been put together by amateur genealogists who are interested in seeing how we all relate to one another. Anyone can go and have a look at www.ytree.net. The "Scots Cluster" in particular can be found at this link - <http://www.ytree.net/DisplayTree.php?blockID=9&star=false>

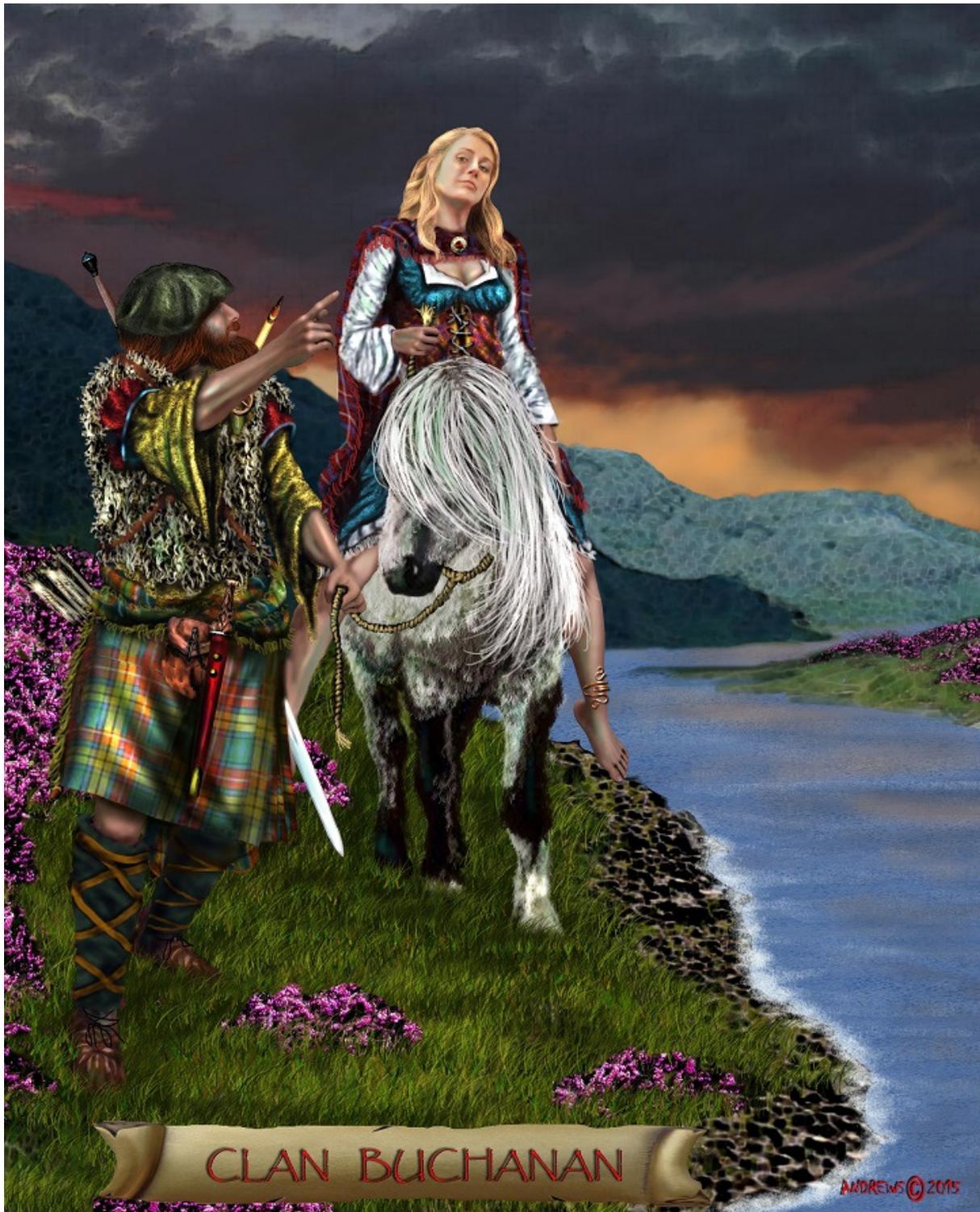


Figure 1 *The Stolen Bride*

There has been a lot of debate about whether this “Scots Modal” line represents: the Dalriada who supposedly came from Ireland sometime in the 4th century AD and settled in Argyll, the Britons of Strathclyde, or a Pictish lineage. Given that Wales is the only other recorded location for the earlier ancestral signature (SNP L1335) it would appear that the line is a line of ancient Britons, rather than of Irish origin, and is perhaps more likely to be a southern “Pict” lineage based on distribution.

Certainly some have pinned their flag on this idea including Jean Manco a scholar of archaeology, linguistics, genetics, and written historic texts. Her works include *Ancestral Journeys* and *Blood of the Celts* (both very illuminating reads with regard to this emerging information). Absolute confirmation of the exact origins within this period will need more testing to resolve the issue, or perhaps intact historic DNA with a particular archaeological association.

There has even been suggestion that the line may incorporate the MacAlpin line. Kenneth MacAlpin was King of Alba from 843-858 AD (both Pictland and Dalriada) and was probably also a Pict himself according to Dr. Alex Woolf's latest look at the evidence (Dr Woolf is a professor of history at St Andrews University and author of "From Pictland to Alba 789-1070"). There are MacGregors, MacKinnons, McPhees, and MacRaes under the umbrella of L1065 the Scots Modal SNP (all supposedly from Síol Alpin). As our cousins, the Grigorach proclaim in their motto - "S Rìoghal mo dhream" (royal is my race). The next time you hear that call, you might do well to wonder if it applies to the Buchanans!

This is all very interesting but what does it really mean for Buchanan heritage? Well now that we are beginning to test Buchanans for SNPs, we can begin to understand where individuals who have tested fit into the clan. We can begin to model the results to figure out if a particular individual descends from the 10th chief or the 13th chief for instance. As more and more Buchanans test, it will be possible to build up a big family tree of all the core Buchanans who descend from the chiefly line. There are Buchanans out there with a well-documented pedigree, and testing these lines gives us a clear map of which SNPs are associated with those particular lines and cadetships.

Have you ever wondered if your Buchanan ancestors were, first of all, descended from the chiefs of clan Buchanan? Do you ever wonder which particular line you come from – whether you are one of the Buchanans of Lenny, of Carbeth, or of Drummakill? Do you want to know who your ancestors are? Would you like to narrow down your search to find the homestead that was left behind in Scotland? This new technology offers the possibility of going way beyond paper trails, and exploring the Buchanan family tree and getting to the point where a few simple tests can identify specific heritages.

To date testing has uncovered what is potentially the presidential line of the USA (ie the Blairlusk line); that a number of individuals bearing the name Bohannon although closely related by STRs are actually more closely related to the chiefly MacGregors than the chiefly Buchanans; and that the MacAuslands do indeed share our core lineage. It may be that members of some of the septs – Gibsons, Watsons, Watts, McMillans, Morrisons etc. may be shown to be offshoots of the line, but this has not yet been proven. There is one Morison in the Buchanan project who has an STR signature which fits in with the Buchanans, and there are Harpers who are positive for the L1065 SNP. Currently a pedigreed Buchanan of Drummakill is undergoing FGC testing to give us a benchmark result for reference. Another male who has a pedigreed lineage to the Buchanan of Leny line has also recently signed up to the Big Y test. We are awaiting a plethora of results and our knowledge is changing on an almost daily basis.

It would be wonderful to see our proud clan take the lead in this field. It is a powerful thing to understand something of your lineage and your connection to your ancestors. This modern technology offers us a chance to recover a heritage that has become lost to many of us by the shortness of our intergenerational memories. There are many of us out there who bear the name Buchanan, but whose known link to the clan itself runs out a mere hundred to two hundred years ago. How magnificent it would be to see our clansmen re-establish a genuine connection with ancestors in Scotland.

I recently had the pleasure of visiting the Clan MacPherson museum in Newtonmore. I marvelled at the heritage they had collected, and at how involved Cluny MacPherson is with his clan (himself one of my own matches through the Big-Y test). I was envious of this heritage they have and of the fact that they are so strongly united under their chief.

It may seem a slim hope but there is a movement within Clan Buchanan to resurrect a chiefly line legitimately through the Court of Lord Lyon (the official heraldry office for Scotland). This would involve either establishing a proven connection via one of the closest cadet lines to the extinguished chiefly line, or electing a candidate of suitable lineage via a family convention or Derbhfine which is a council of armigers of documented lineage. There are undoubtedly many among us who can use this DNA technology to direct their genealogical research to establish a verifiable paper trail to back up what the SNP model shows them regarding their line. It may therefore be possible to identify the closest line to the extinguished chiefly line or to create enough armigers to re-elect a clan chief using DNA to focus research. Surely there are none amongst us who could fail to be inspired by the idea of elevating our clan?

How can you get involved or help? There are a number of ways we can come together and map our line. There will be those among us who are prepared to undertake NGS tests such as the Big Y or FGC Full Genome tests in order to determine all of their SNPs. There will be those who test their STR signatures (this is the old method of testing which can be seen on the results page of the Buchanan project) and this will give them a good idea of where they fit in and which SNPs they are likely to have in their genome. There will be those among us who can begin testing specific SNPs discovered by others to see where they fit into the line. And finally, between us all we can always muster a few spare \$\$ to put into the general pot, so that this money can be used to test strategically and to help map the genomes of pedigreed Buchanans to form a library of DNA results we can link to known genealogies. If there are any Buchanans out there with clearly documented lineages, it would also be very useful to have contact with these families.

It is possible to join the project at <https://www.familytreedna.com/group-join.aspx?Group=Buchanan> although it might make sense to contact the project administrator Alex Buchanan (or myself at ross.sw.buchanan@gmail.com) in order to find out what level of testing should be carried out.

It is also possible to contribute any amount no matter how small to the furtherance of our proud clan at <https://www.familytreedna.com/group-join.aspx?Group=Buchanan> by clicking on the Donate button. Please check with Alex in advance as sometimes we will be funding external testing at other sites. The project is administered on a voluntary basis and we have the very kind support of a kinsman who has a very strong ability to manage and understand the complex data generated by testing. We are all working together to map out the Buchanan line, and to give everyone a taste of the heritage that has been lost to them. All monies donated are used to pay for strategic testing to improve knowledge of the Buchanan line.

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CLAR INIS!!

- Ross Buchanan