Manx Y-DNA Study – Three year report – October 2013

Summary

The Manx Y-DNA study seeking to identify the early male genetic origins of the indigenous Manx families has now been running for three years and is at its approximate half-way stage. Recruitment and testing has been slow but steady over this time and families representing approximately 70% of the indigenous Manx population have been fully or partially tested.
76% of the population is assessed as being of Celtic origin with the remaining 24% coming from Scandinavia, most probably with the Vikings.
The origins of a number of Manx families, before they arrived on the Isle of Man, have been identified and early connections with other neighbouring Irish tribes and Scottish clans are starting to be seen. Hence the study is already providing totally new insights into the early history of the people of the Isle of Man

Introduction

The history of the Isle of Man would suggest that the bulk of the population is of old Irish genetic origin, with more recent traces of Scandinavian genes from the time of the Norse rule of the Island. Further genetic diversification then came from later incursions by neighbouring Scots and English (Anglo-Normans).

A study was carried out in 2003[1] to investigate the genetic make-up of the whole of the British Isles which included testing 62 Manx men resident on the Isle of Man and possessing traditional Manx family names. This research was published at the time as part of the BBC series "Blood of the Vikings". Amongst other findings, this study confirmed the existence in the male population of the British Isles of genetic traces of people of Scandinavian origin in places where Vikings were known to have settled, including the IOM. The broad inference drawn from these results was that approximately 29% of Manx males showed a possible Scandinavian genetic origin (Haplogroups R1a + I) and the remaining 71% (Haplogroup R1b), a Celtic origin[2].

The precision of these particular tests and analyses by today's standards however is relatively crude and imprecise, as DNA testing and interpretation has progressed markedly since 2003. In August 2010, John Creer, a man of Manx descent living in Cheshire, started a new specific Manx Y-DNA project[3] to take advantage of these newer developments.

Study Objectives

The study was set a number of objectives, namely:

a) To undertake a deep assessment of the different male genetic origins of the indigenous Manx families.
b) To compare these genetic origins with the interpreted origins of these Gaelic names, according to the linguistic and historical research of the last century, (JJ Kneen, AW Moore et al.), thus possibly throwing a totally new light on how these names were originally formed.
c) To identify any old genetic linkages between individual Manx families and to predict when any such common ancestry may have occurred.
d) As a result of the above objectives – to provide unique and new insights into the early origins of the people of the Isle of Man, in a way that no one else has been able to do so far.

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[1] Capelli et al 2003

[2] Some 85% of the male population of the British Isles belongs to Haplogroup R1b and can be loosely classed as being of "Celtic "origin.

[3] See www.manxdna.co.uk

Background – Manx History until 1400[4]

It is likely that the first Celts to inhabit the island were Brythonic tribes from mainland Britain. It has been speculated that the island may have become a haven for druids and other refugees from Anglesey after the sacking in 60AD. There is no evidence to suggest that the Romans ever landed or had any influence on the island.

Irish migration to the island probably began in the 5th century AD. It is generally assumed that the Irish invasion or immigration formed the basis of the modern Manx language. This is evident in the change in language used in Ogham inscriptions. The transition between Manx Brythonic (like Welsh) and Manx Gaelic (a Goidelic language which remains closely related to Irish Gaelic and Scottish Gaelic) may have been gradual but by the 7th century the language was essentially identical to that of the Irish Gaelic indicating the then major influence of the Irish on the local population. Tradition attributes the island's conversion to Christianity in around 500AD to St Maughold an Irish missionary who gives his name to a parish.

From 800AD onwards the island became subject to Viking raids from the sea and within 100 years it was under the control of the Scandinavian Kings of Dublin and then from 990AD under the Norwegian Earls of Orkney. Various Scandinavian rulers continued to rule until King Magnus of Norway ceded the island to Scotland in 1266AD. The island then alternated between periods of Scottish and English rule until 1346AD, when the English finally took control permanently.

At several times during this latter period the island was subject to sporadic influxes of foreign settlers. Following the battle of Clontarf in 1014 the Norse-Gael king of Dublin, Brian Boru, was killed and appreciable numbers of Norse-Gaels fled to the Isle of Man for sanctuary and possible settlement. There is also some evidence to suggest that there was a new influx into the island by Scottish members of Robert the Bruce's contingent after his invasion in 1313.

Date	Incoming Settlement	Where from
100AD	Brythonic Celts	Wales/Anglesey/England
400AD	Goedelic Celts	Ireland
800AD	Scandinavian	Norway, Denmark
1000AD	Norse-Gael	Ireland, Western Isles and Scandinavia
1300AD	Scottish	Scotland
1346AD	Anglo-Norman	England

Thus we can assume that there will be traces of these patterns of immigration within the genes of Manxmen today that could be uncovered through Y-DNA testing.

Methodology

There are approximately 115-120 family names, that are generally recognised as being uniquely indigenous to the Isle of Man, which still remain in use today on the Island and can identified as being present on the Island in the 15th century. These are family names that can be at least traced back to names recorded in the surviving IOM Manorial Rolls of 1511 and where the classic reference books (Kneen, Moore and Quilliam) describe them as being early Manx surnames. Most of these names were Gaelic in form and being patronymic they began with the prefix "Mac" (son of). The first Manx patronymic family name was recorded in ca 1100AD but in the 16th century the large majority of these

[4] Acknowledgments to Wikipedia

names lost the "Mac" at the beginning of the name and evolved into the modern form of these names that we see today.

Men bearing these names today can therefore be judged to be genetically representative of an original indigenous Manx population going back to early times (at least from 1400AD and before). Thus Y-DNA testing of these unique name-bearing men today can provide a picture of the genetic diversity and different origins of this early Manx population pre 1400AD.

The basic Y-DNA test[5] used in this study provides a way of assessing the degree of relatedness between men who may or may not belong to the same family group. This can be done by comparing an individual's set of results (a haplotype) with those of other men, who have been tested in the same way, and whose haplotype results are available within external public databases.

Expert analysis of haplotype data can:-

- identify with a high level of confidence whether two men are related in a recent timeframe (i.e. whether they share a common ancestor some time in the past)
- predict an approximate timescale for when the most recent common ancestor would have lived
- predict approximately where that individual fits within the overall human male genetic family tree (haplogroup)

A further, more sophisticated, Y-DNA test (Y-SNP)[6] can also be used to exactly pinpoint where an individual fits on the human genetic family tree and this is helpful in identifying connections between families and tribes before family names were adopted.

Over the course of time, increasingly more sophisticated testing and analysis tools are being developed, as at the same time our knowledge of the detailed structure of the human genome is also developing.

Men of proven Manx origin, bearing one of the unique family names were invited to be tested and their results included in the study database, together with those of Manx men who had already been Y-DNA tested and whose haplotype results were already in the public domain. A minimum of two men from each family were required to be tested to eliminate false paternity lines and to establish the genetic fingerprint for that family.

Progress So Far

As at the date of writing[7] the Y-DNA results of some 146 men of clear Manx origin have been included in the study database. Frustratingly only a small number of these men[8] are living today on the Isle of Man[9].

Full or partial results are available for 64 out of the 115 unique Manx families and represent some 70% of the present day population of these 115 families, on a weighted basis[10]. This response so far is encouraging with a significant level of recruitment within the first 36 months, especially when there has been no external financing to assist people in paying for their tests.

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[5] STR – Standard Tandem Repeats – the basic type of Y-DNA analysis. The greater the number of STR markers, the more accurate the test.

[6] SNP – Single Nucleotide Polymorphism – a unique genetic marker

[7] 25th October 2013

[8] Less than 5%

[9] Suggesting that the descendants of islanders abroad are more keen to research their family genetics, or are more prepared to pay the costs of testing, than those still on the Island.

[10] Using the 2001 Electoral Roll as a basis for forming an assessment of the relative frequency of each family name within the "indigenous" population as recorded in 2001.

Early Analysis and Results

On the basis of the data collated so far, approximately 76% of the indigenous male Manx population was recorded as haplogroup R1b and hence could be deemed to be of Celtic origin, and the balance of 24% (a mixture of haplogroups R1a, I and Q) of North European/Scandinavia origin.

For 38 of the 64 families included so far, the ancestral haplotype, or the representative Y-DNA signature for that family, has been identified. This means that some Manx families can already be clearly identified from their Y-DNA data as being of North European/Scandinavian origin and most likely settling on the Island around the time of Viking rule. The remainder can be described as being of what is commonly named as Celtic origin, coming from an area neighbouring to the Isle of Man.

The presence of non-paternal[11] results within the body of the results so far is a complicating factor, as well as the fact that some of these specific Manx family names do occur elsewhere in the world[12] and men are able to apply to join the study without any certainty that they have a Manx origin, but wish to find out by being tested. Until a greater body of results is available, either by filling in the gaps with existing families or by new testing, then a full and detailed analysis of the earlier genetic origins of these Manx families is still not possible. So the information given below is only preliminary and incomplete.

Time to the Most Recent Common Ancestor (TMRCA) calculations[13] are carried out when there are sufficient test results for a family to make the analysis meaningful. This analysis identifies the date range for when the nearest common ancestor lived for the sample group. This obviously does not preclude the group having earlier common patriarchs, it only identifies the one most recent common male ancestor for the men tested. However, when there is a suspicion that a family is the descendant of one patriarch who earlier came from somewhere else to the region where his descendants subsequently lived for a long period, then it increases the possibility that the TMRCA calculation might also coincide with the time period in which the early patriarch arrived. From what we know of the history of the Isle of Man, then this condition of patriarch arrivals from elsewhere may well be true for many of the families we are examining.

R1b Families

Haplogroup R1b is the largest genetic male grouping within the UK applying to ca 80% of the total male population. A lot of research is currently being directed at defining the detailed genetic family tree within R1b and whilst broadly it can be said that a R1b man is of Celtic origin there are many much more subtle distinctions and differences to be identified within this haplogroup.

The L21 SNP within R1b is prevalent in Scotland and Ireland and is judged indicative of a Celtic origin. All but two of the Manx R1b group categorised so far are L21+. This group contains Crellin, Crennell and Garrett which are tested as M222+. This is a strong Irish haplotype more popularly attributed as defining the Uí Néill dynasty of early Ireland.

Brid(e)son and Quilliam show a particular SNP L159.2 which indicates an early origin amongst the Leinster Irish families, and the Brid(e)son/Quilliam common patriarch lived about 500AD. The Manx Crowe family show clear genetic connections to the O'Meagher family of Ireland also.

Creer and Christian, as well as probably Moore and Quark are DF41+. This SNP is also under L21 and is only recently identified, but is certainly Celtic. The Creer family is one of only three families tested so far that show a rare SNP L563 and in light of the fact that these two other families possess Scottish names it would suggest that the Creer patriarch may well have been Scots.

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[11] Men who are not genetically similar to the rest of their family line, as a result of a past illegitimacy, adultery, adoption or name change in their paternal line.

[12] E.g. Morrison, Moore, Cowley, Kelly etc

[13] Using Dean McGee's Y-DNA utility, FTDNA mutation rates and 95% confidence limits

Kelly and Faragher are DF27+ which may be indicative of an early Basque Celtic origin. Faragher shows a distinctive genetic pattern named "ROX2" which was first found in Scotland. Clucas also shows another, but different, genetic pattern which places this family in a group of predominantly Scottish men in the "Little Scottish Cluster"

More details together can be seen in Appendix 1

R1a Families

Haplogroup R1a is one of the more common haplogroups in Eurasia. Where this genotype is found in men in the North and West of the United Kingdom it is assumed to have come from Scandinavia, brought over by the Vikings.

3 Manx families have been defined as R1a, SNP M198+. Surprisingly all three of these families, Cain, Keig and Oates, appear closely related to each other and probably all share a most recent common ancestor in the period 900-1000AD. This raises the tantalising prospect that these three lines are all the descendants of one early male Viking settler who arrived on the Isle of Man around 1000 years ago.

There is some suggestion that the Brew family is also R1a and may have originated in Sweden. Further testing is required.

See Appendix 2

I1/2 Families

Haplogroup I1 is the original paternal lineage of Nordic Europe and is defined by the SNP M253. Four Manx families so far have been identified as belonging to this haplogroup, Casement, Kaighen, Karran and Looney and so we can safely assume that their patriarchs also arrived on the island with the Vikings. Despite the apparent possible similarity in name between Kaighen and Karran there is no genetic connection between the two families within the timeframe that family names have been in use. TMRCA analysis suggests that the patriarchs of all these families existed in the period 1000-1300AD.

Haplogroup I2 is Continental Europe's Mesolithic paternal lineage. Two families Callow (L126+) and Kinley (L161+) have tested as haplogroup I2 and these genotypes are low frequency in the UK and are more typical of N Europe – so again we can assume that these genes arrived on the IOM with the Vikings.

See Appendix 3

Other Families

One Manx family, Killip, has tested as haplogroup Q with a positive SNP of L527. Haplogroup Q is very rare in Europe, and L527 only occurs at low frequency in Norway and Sweden. Thus we can safely assume that the patriarch of the Killip family was also a Norse Viking.

Etymology of Manx Family Names

The Manx scholars of the last century represented by JJ Kneen and AW Moore published comprehensive studies of Manx family and places names derived from the study of early records from many sources. Such reference books have been considered to be definitive for many years. However, with the increasing popularity of family history research and the much wider accessibility to these early records, new scrutiny is being applied to these early reference works and new and different thoughts and interpretations are starting to be offered regarding the origins of our range of Manx family names. With further analysis it is expected that the Manx DNA study will also be able to offer some new perspectives on the origins of these names, which hopefully will be of interest to all.

The Future

The rapid developments that are taking place in the understanding of the lower levels of the structure of the R1b haplogroup, mean that new light is constantly been thrown on the genetic identification of the Celtic tribes and clans at a level of definition hitherto unknown. For this reason, as such a large proportion of the male Manx population belongs to this group, it is expected that this study will continue to run for another three years before it can be meaningfully concluded.

Additionally, the lack of financial resources to support spontaneous testing of new men is also a limiting factor. Hence it is not expected that the further testing of approximately 100 more men from various untested families, required to effectively complete the coverage of the indigenous Manx population, will be finalised until another three years.

In the meantime any financial support provided to permit cost-free testing for men on the Isle of Man would be strongly welcomed and would generate a much needed boost to recruitment. Approximately £10-12,000 would be needed over the next three years. Also any specific Manx historical or etymological input to the project would be welcomed at any time.

Anyone wishing to take part in or support the project should first of all contact John Creer via the Manx Y-DNA study website at www.manxdna.co.uk.

Appendix 1 – R1b Summary

Name	Selected Previous Variants	Linguistic Origin	Y-SNP	Early Origins
Bridson	Brideson/Brydsonne	Son of Bride	L21/L159.2	Leinster origin
Callister	Mac Alisandre/Mac Alexander/Mac Alister	Son of Alexander	L21	
Cannon	Mac Cannan/Mac Canann/Mac Cannon	Son of Cano/Cana		
Christian	Mac Crystyn/Mac Christen/Cristen	Son of Kristinn	DF41	
Clucas	MacLucas/Clugas/Clugish	Son of Luke/Lucas	DF21	Little Scottish Cluster
Corlett	Mac Corleot/Corleod/Curlett	Son of Thorljotr	L21	
Cowin/en	Mac Cowyn/Mac Owen/Mac Cowne/MacCowan	Son of Comhghan	DF21?	
Creer	Mac Crere/Mac Crear	McCreagh/MacRiogh	L563	
Crellin	Mac Nellen/Crelling	Son of Niallin	M222	Uí Néill
Crennell	Mac Reynylt/Mac Reynold/Crinill/Crenilt	Son of Rognvald	M222	Uí Néill
Crowe	Crawe/Crow	Son of Cu-chradha	L21	O Meagher
Far(a)gher	Fayhare/Farker/Farghere/Farquahar	of Fearchair	DF27	ROX2
Garrett	Mac Kerd/Mac Kerret/Mac Kerad/Carrett/Karrett	Son of the artificer	M222	Uí Néill
Gawne	Mac Gawne/Mac Gawen/Gawn	Son of the smith	Probable L193	
Kell(e)y	Mac Helly/Mac Kelly/Mac Hellie/Kelley	Son of Ceallach	DF27	
Morrison	Moresone/Morisone/Mylevoirrey	Son of Mary's servant	L21/L1402	Irish, Seven Septs of Laois,
Quilliam	Mac William/Mac Uilliam	Son of William	L21/L159.2	Leinster origin
Stowell	Mac Stoile/Mac Stole/Stoall	From Stowell (Gloucs)		
Watterson	Wauterson/Waterson/Kodhere/Codere	Son of Walter	L21	

Appendix 2 – R1a Summary

Name	Selected Previous Variants	Linguistic Origin	Y-SNP	Early Origins
Brew	Mac Brow/Mac Brew/Mac Brow/Brewe	Son of the farmer	SRY10831.2	Possibly Swedish origin
Cain(e)	Caine/Mac Kane/Mac Cayne/	Mac Cathain	M198	Oates/Keig and Cain share common (viking) ancestor
Keig	Mac Kyg/Mac Heg/Keage/Kegg/	Son of Tadhg	M198	Oates/Keig and Cain share common (viking) ancestor
Oates	Otte/Otes	Odo	M198	Oates/Keig and Cain share common (viking) ancestor

Appendix 3 – I Summary

Name	Selected Previous Variants	Linguistic Origin	Y-SNP	Early Origins
Callow	Mac Aloe/Mac Calo/Mac Callow/Caloe	Son of Allow	I-L126	
Casement	Mac Casmond/Casymound/Casmond	Son of Asmundr	Possibly L338	
Kaighen/in	Mac Haughan/Mac Caighen/Mac Caghen/Caighan	Son of Eachan	Z140/Z141	
Karran	Mac Carron/Mac Carrayne/Mac Carrane/Kerron	Son of Ciaran		
Kinley	Mac Fynlo/Kynley/Kinloe	Mac Fhionnlogha	I-L161	
Looney	Mac Lawney/Lowyne/Loweny/Mac Lowney/Lewney	Son of Giolla Dhomhnaigh	M253	Tested group were all US descendants of same man