

# G16: Clouties on the Family Tree

## Genetics take over where the paper-trail ends

WC 3613

In Cornwall people sometimes hang strips of cloth torn from their own clothing on trees near wells and springs which were sacred in pre-Christian times. These strips of cloth are known as *clouties*<sup>1</sup>. A *cloutie* is a prayer offering which, as it decays, is believed to bring healing or other benefit to whoever left it there.



*Clouties on the Cloutie-tree,  
Madron Well, Cornwall  
(photo: KiwiBetsy 2006).*

Back in the days when I was up to my neck in family history, I used to grow exasperated by people who spent their time researching the names of dead ancestors which they hung, triumphantly, like clouties on their family tree. A pedigree is not family history. To clarify what I mean, the "begats" in the Bible might

document the line of descent but they tell you nothing about the lives and times of those people with the funny names and even more unbelievable life-spans. A pedigree is only useful if it establishes your right to something of value — a title, a lost fortune or a castle in Spain. It is also important, as it was in the time of Genesis, if it established your membership of a tribe.



*The 'but-and-ben' where William Hay lived.*

In my own case, my "pedigree" establishes my membership of Clan Hay. In particular my pedigree places me as one of the "Hays of Nairn", men who are the descendents of a Norman knight who held lands in Northern Scotland from the 13<sup>th</sup> to 18<sup>th</sup> Centuries. Although my "paper trail" goes back only as far as 1777 when

my ancestor George Hay married Janet Watson, clearly George's ancestors had been in Scotland for a long time. He was not a wealthy or aristocratic man, indeed at the time of his marriage, he was a "pensioner", invalided out of the British army. His son, William was an agricultural labourer and his grandson, a

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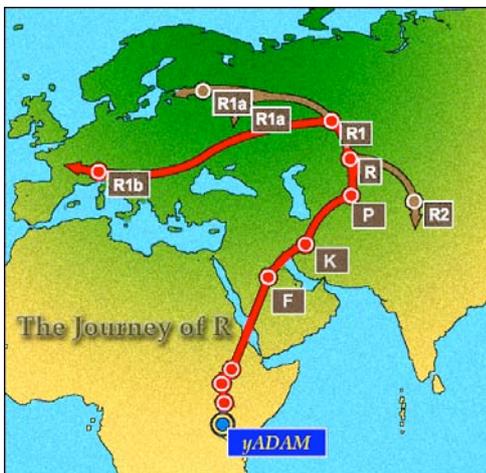
<sup>1</sup> The word is commonly used in Scotland to refer to the cloth in which puddings are boiled.

thatcher. Younger sons of Norman knights usually inherited nothing but their surname and rapidly fell down the social ladder!

As with "paper-trail" family history, so too with genetics. There is little use my knowing that I belong to one or other y-Haplogroup if I cannot flesh this out with at least a little history. And so, in this session, I want to try and do just that as a way of demonstrating some of the processes and problems involved in placing ancestors in time and place rather than just having a label, like a *cloutie* to hang off your pedigree.

## The genetic trail begins

There is not much point in being told — as I was by Oxford Ancestors and other testing laboratories — that I was of Celtic extraction if I did not know what that meant or perhaps worse still, believed I belonged to some latter-day mythological "nation" which never existed. As it happened, although I believed for years that given my paper-trail family history takes me back to Nairnshire in Northern Scotland, and given that the limited SNP results the labs could provide until recently, "Celtic" in my case meant Pict or other ancient Scot. Since November 2006, however, I have had to re-tune my identity more towards being a Continental rather than Insular Celt, a descendent of a Celtic tribe who lived somewhere near the headwaters of the Rhine River in what today is Germany. This identity crisis was brought about by testing positive to the SNP R-U152/S28 which suggests my ancestors once lived near what today we would call the La



Tène site. I have since refined this with yet another SNP, R-L2, but because too few of us have to date tested positive for R-L2, I will concentrate on the more generic R-U152<sup>2</sup>.

My history since my ancestors came out of Africa is therefore the journey of Haplogroup R. It begins, as does the history of everyone who is not of African descent, with my forefathers crossing the Red Sea and entering Asia.

## The journey of R

We remember that only three y-Haplogroups came out of Africa, one of which carried the mutation M89 which identified it as yHaplogroup F. Later, out of Africa and probably in Iran or Central Asia, a mutation M9 created yHg K which in its turn produced SNP M45 which we use to define yHg P. P is the remote grandfather of most Europeans because generations later, probably on the Steppes

<sup>2</sup> In passing, however, I must note that L2 seems so far to be distributed fairly roughly throughout the U152 area and that my R-L2\* at this stage seems to be the majority sub-group in the larger clade.

of Northern Asia, a further mutation, M207 produced yHg R. However, these men were to remain on the Steppes of Central Asia for many generations before a later mutations labelled R-M269 shows they had eventually entered Europe. The majority of European men are descendants of this haplogroup, including roughly 70% of English men, 95% of Spanish men, and 95 % of Irish men.

### Meanwhile, back at my genealogy...

Given that I have tested positive to R-U152, I know that sometime in the very distant past, a baby boy was born who differed genetically from his father because at a point on his y-chromosome, an “A” had replaced a “G”<sup>3</sup>. This change was permanent so that not only this little boy but all his descendants — me included — also had an A where his father and earlier paternal ancestors had a G. There would have been nothing to show this boy was any different from any of his fellows and the genetic change was not disadvantageous in any way. Only since we have been able to sequence our genes has the change been observable.



As discussed earlier in this course, we really cannot say when a mutation first occurred. The best that statisticians can calculate is the TMRCA or “Time to the Most Recent Common Ancestor” which, of course, could be well after the actual birth of the mutation.

*Map of known distribution of U-152/S28 as tested to date.*

Neither can we be absolutely certain as to where the mutation first occurred. However, it is reasonably safe to assume that the greatest expansion took place in a broad region of Central Europe. Of course, looking at the map, we might be fooled into believing R-U152 flourished first in eastern Britain but that is an artefact of testing, a bias caused by more British men testing than others elsewhere. As we have already discussed, haplotype diversity is perhaps the best indicator and the diversity of R-U152 is greatest in this part of Europe with a trend — or “cline” as geneticists call it — running from east to west.

Dr. David Faux was the founding president of *Ethnoancestry*, the first lab to discover and test for what they called S28, so he has had access to research databases not generally available even to most academics, and he is also himself

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<sup>3</sup> Technically, “rs1236440: G>A”. See Dr Faux’ R1b1c10 Resources page at [www.davidkfaux.org/R1b1c10\\_Resources.pdf](http://www.davidkfaux.org/R1b1c10_Resources.pdf)

R-U152 so he has personal stake in researching this clade. He defines the R-S28/U152 clade as a La Tène marker<sup>4</sup> because, even if it might have first occurred somewhere else, it appears the mutation is closely associated with this ancient Central European Celtic homeland. Modern test results show it now spreading *from Central France to the Carpathian Mountains, with a tight concentration in southern Germany and the Swiss Lake country*. The epicentre of R-U152, he later wrote, would appear to have been the triangle between the Rhine and Danube Rivers to the north of Switzerland.



*Part of Europe showing the Rhine, Danube and Elbe rivers<sup>5</sup>*

Although modern testing suggests this location for U152/S28, we also need to know where the ancestors of these post-SNP men came from. As we have already learned, until mid-2008 just about everyone<sup>6</sup> assumed that the

<sup>4</sup> See Faux, D: *A Genetic Signal of Central European Celtic Ancestry: Preliminary Research Concerning Y-Chromosome Marker S28 / U152*. This can be accessed from <http://cerbere.ca/S28/>

<sup>5</sup> The map is from [http://www.vacationstogo.com/international\\_river\\_cruises.cfm](http://www.vacationstogo.com/international_river_cruises.cfm)

<sup>6</sup> Barbara Arredi et al., questioned this in 2007 in "The Peopling of Europe", in Crawford, MH (Ed): *Anthropological Genetics*, Chapter 13, pp380ff, Cambridge University Press 2007. In earlier papers, Arredi, Chris

mutation occurred in a people who had emerged from the Franco-Iberian refugia after the LGM and drifted northwards during the Mesolithic. However, now we know that this was not possible because statisticians have re-calculated the ages of R-M269, R-P311 and among others, R-U152 and concluded these all date from the Neolithic or younger — even Bronze Age! Whereas it has been presumed they would have been in the refugia during the LGM, it now appears they were not even in Europe at the time.

One of the first genetic genealogists to suggest a new age for R-U152 was Vince Vizachero<sup>7</sup> who calculated it as 6600 years bp: that is, about 4600 BC. This definitely places it in the Neolithic although, as later estimates suggest, it is perhaps a bit too old. The calculations by another geneticist, the Canadian Jacques Beaugrand<sup>8</sup>, place the TMRCA at a younger extreme of about 3038 years bp., or over a hundred generations ago. He also estimates that based on present statistics, there are probably in excess of 10 million males now living in Europe who are R-U152/S28 positive with as many again living in America.

The following table shows a selection of the various estimates:

<b>Author</b>	<b>Source</b>	<b>TMRCA</b> years bp
Vince Vizachero	<a href="http://www.davidkfaux.org/R1b1c10_Resources.pdf">www.davidkfaux.org/R1b1c10_Resources.pdf</a>	6600
Anatole A. Klyosov,	<i>Nature Precedings</i> : hdl:10101/npre.2008.2733.1 29 Dec 2008	4,375
Tim Jansen	RootsWeb-DNA 29 Nov 2009=8	5237-3012 Average between upper and lower limits = 4125
Ken Nordtvedt	RootsWeb-DNA 16 May 2008	3644
Eupedia	<a href="http://www.eupedia.com/europe/origins_haplogroups_europe.shtml#R1b">http://www.eupedia.com/europe/origins_haplogroups_europe.shtml#R1b</a>	3500
Jacques Beaugrand	RootsWeb-DNA 16 May 2008	3080

*TMRCA as calculated for R-U152/S28*

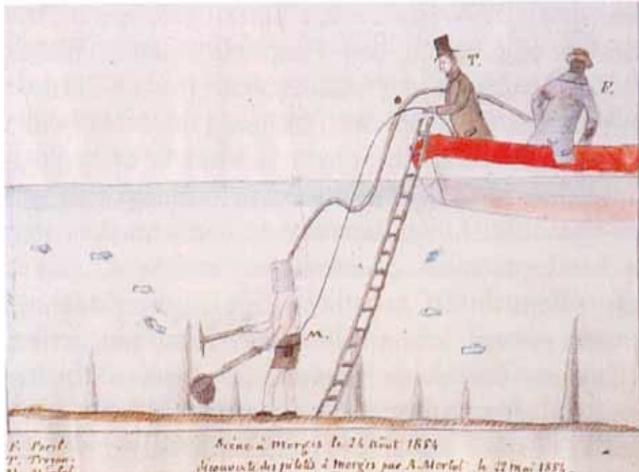
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Tyler-Smith and Mark A Jobling have also questioned the assumption made by Semino et al. that Europe was re-populated by people moving out of the Franco-Cantabrian refugia after the LGM.

<sup>7</sup> Quoted by Dr Faux at [www.davidkfaux.org/R1b1c10\\_Resources.pdf](http://www.davidkfaux.org/R1b1c10_Resources.pdf)

<sup>8</sup> 16 May 2008, GENEALOGY-DNA@rootsweb.com

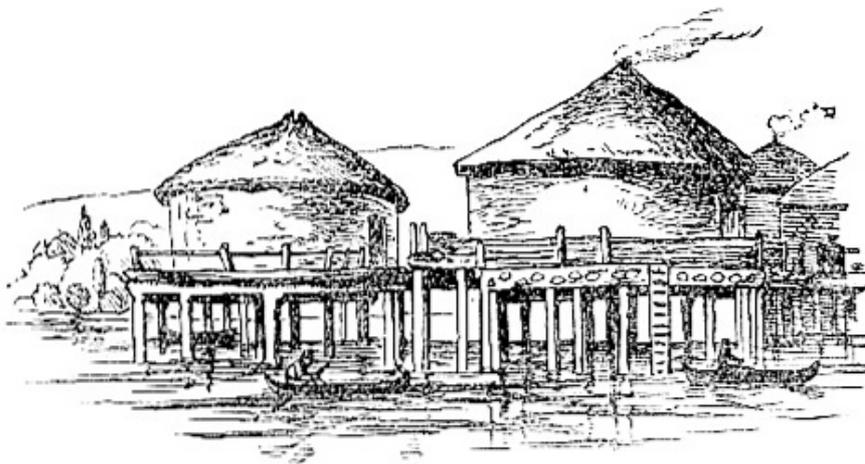
So, looking at all the men who test R-U152/S28 positive today, and allowing for the many variations in the calculations, we can only say we shared a common ancestor probably some time between 3500 and 4000 years ago, that is about 1500-2000 BC in the European Bronze Age.



*Submerged settlement in the Zürich Lake investigated in 1854 by Forel, Morlot, and Troyon.<sup>9</sup>*

## Lake Side Dwellers of Alpine Europe

During the winter of 1854 the water levels in the Swiss lakes were very low so the good people of Obermeilen decided to build a wall and thus reclaim some land when the water levels rose again. During the construction work, to their surprise they found all manner of wooden posts, animal bones and a variety of artefacts buried in the mud at the lake edge. The local schoolteacher alerted a famous archaeologist whose findings, when they were published in 1854, aroused world-wide interest.



*Ancient Swiss Lake Dwellings. From Frederic Troyon's "Habitations lacustres de la Suisse", 1860. Note these circular buildings are characteristic of the crannógs of Scotland and Ireland: the houses in Switzerland were rectangular.*

Since then, remains recognised as Neolithic and Bronze Age lake-side dwellings have been found in Switzerland and southern Germany, Bavaria, north-eastern France, northern Italy, in western Austria, Slovenia, Croatia, Albania, and Greece. In Scotland and Ireland similar — although circular — constructions called *crannógs* were also found. In Switzerland, most of these prehistoric sites have been found between the Jura mountains and the Alps, not only on the major lakes, including Lake Neuchâtel (the La Tène site), Lake Zurich and Lake Constance, but on many of the smaller ones which dot the region.

<sup>9</sup> [www.abc.se/~m10354/uwa/submerge.htm](http://www.abc.se/~m10354/uwa/submerge.htm)

In recent times, the new techniques of dendrochronology have allowed very precise dating of the timbers from which these stilt-houses were constructed, the more precise because the watery grave in which these remains have been enclosed all these centuries provided an anaerobic environment which preserved them far better than had they been buried on dry land.



*Reconstructed crannóg on Loch Tay*  
(Creative Commons Attribution 2.0)

Although over-all these Swiss “lucustrine” villages were built between 4300 BC and 2450 BC there are gaps in which no examples have been preserved — for example, 3600–3400 BC and 3370–3250 BC. On the other hand, some periods, such as 3800–3650 BC are remarkably well preserved and hence, documented.

Unless we take the very oldest estimates of the TMRCA of U152, these dates would indicate that the people living in these villages were more probably the forefathers of the baby boy whose mutation R-U152 began the lineage we are able to test today.



*The reconstructed village at the Pfahlbau Museum dedicated to the Lake Dwellers at Unteruhldingen on the Bodensee (Lake Constance). This is an open air museum with reconstructions of lake pile dwellings from 4000 BC to 850 BC. "GNU Free Documentation License".*

Not all of the houses were built on stilts over the water —there were others built on dry land — but those which were, the stilt-houses, were constructed by sinking large poles deep into the lake bottom. Smaller poles were then used to construct

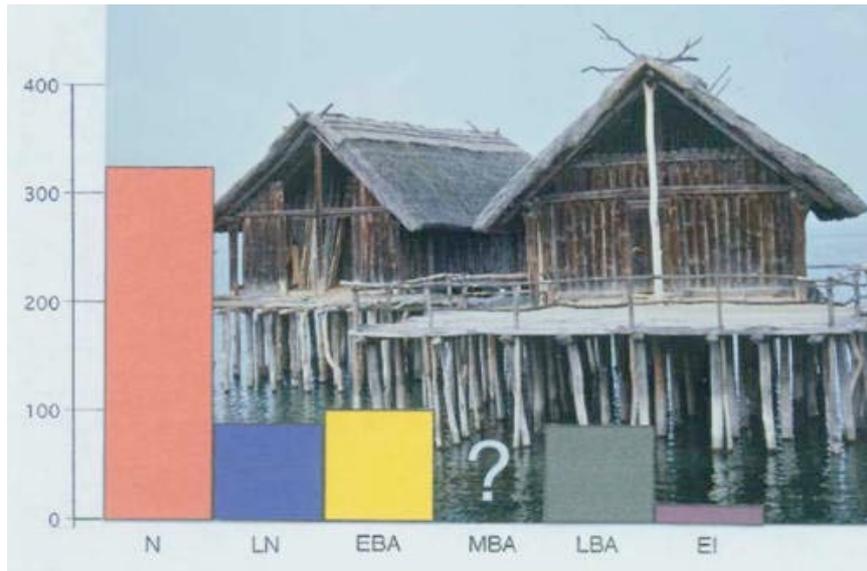
the house on this platform. Hazel “withes” were twined around the uprights and clay then smeared over them, as in “wattle and daub”, to make the walls. The roof was usually shingled, often with white fir. Dendrochronological evidence shows that these houses lasted on average between 10 and 50 years, oak piles lasting longer than those made from softer timbers.

These houses were rectangular, measuring from 6 to 12 meters long and 3-6 meters wide. Some were divided into two rooms, one with a fireplace or a clay oven. Archaeologists believe the people actually slept in the roof space. The inhabitants were most probably several generations of the extended family. Villages varied in size, ranging from maybe half a dozen to over a hundred houses so that in the larger ones, the community might have consisted in almost a thousand persons.

Such populations of course impacted on the local environment. In the fifth and fourth millennia BC, this Alpine region was heavily forested with only small local areas cleared for habitation. However, as populations grew, more and more forest had to be cleared for cultivation. This in its turn reduced the habitat for wild animals, many of which were hunted for food by the lake-dwellers including most commonly, red deer — but also roe deer, wild boar, fox, wolf, bear, and beaver, and less often, aurochs, European bison, moose, chamois, ibex, and smaller furry animals.

By 3000 BC bones of birds and other fauna, such as hares, as well as of plants typical of open landscape, had greatly increased among the archaeological “finds”. And the lakes themselves had been affected by human occupation: clearing the land meant that there was greater rain run-off, consequent silting and change to the mineral content of the water as well as contamination from the waste deposited by the lake-side dwellers. The lakes thus became “eutrophic”, prone to algal bloom at the surface while at lower levels, a lack of oxygen meant not only that remains were well preserved for future archaeologists but, for the locals living there at the time, fish stocks were depleted. Perhaps this, along with decreased fertility of the soils and consequent lower yields from their gardens as well as a reduction in available wild game, all adds up to an explanation why these lake-side villages were abandoned from time to time.

Climate change might have also been another factor in why villages were abandoned. One explanation why these lakeside village houses were built on stilts has probably to do with the fluctuating water levels in the various lakes. These are fed principally by melt-waters from the surrounding mountains; cold years produce more snow but less melts to run off the mountains and fill the lakes and streams. As a consequence, water levels are low. Alternatively, warmer spring and summer months can bring higher water levels. Stilt houses probably provided some insurance against these fluctuations while leaving the fertile land on the lake shore free for the village gardens.



*In the background is a reconstruction of a lake-dwelling at the Pfahlbau Museum, Unteruhldingen, Germany. The graph in the foreground shows the relative water levels from the Neolithic to the Early Iron Age. No sites from the Middle Bronze Age (1500–1250 BC) have been found. (Original photo and manipulation: F. Menotti<sup>10</sup>)*

While forest cover remained fairly dense, the main domestic animals were goats, pigs and sheep as well as the ever-present dogs. Horses were probably introduced around 2,700 BC, during the Corded Ware culture, when cattle herding became more common on the — by then — more open landscape. Back at the lake edge, fish of various kinds were of course an important part of the daily diet as were frogs whose little bones have been found in large numbers.

Another consequence of the reduction in the forest cover was that land travel and therefore trade became easier. Many resources were traded over long distances, including flint from both northern Italy and parts of France which were used to make knives, sickles, scrapers, and arrowheads. Another example of objects traded over long distances are clay vessels whose decorations show they originated in places such as Bohemia, Slovakia and Hungary.

Although these pots might indicate some kind of status goods, by all appearances there was little social stratification in these settlements. Usually archaeologists recognise differences in status according to the richness of grave goods and style of burial. There are relatively few burials in these locations, suggesting that some other form of the disposal of the dead was practised by the majority of the people, so perhaps just being buried, even along with several other bodies, in a stone cist was a mark of social prominence. Even so, these were not rich graves although the presence of some grave goods indicate that the people probably believed in an after-life. There is an example of an individual burial, in Lenzburg, of a tall man of about 35 who might have been a chieftain because with his remains were found a

<sup>10</sup> <http://pages.unibas.ch/arch/personen/menotti/LakeDwellings/LakeDwellings.htm>

number of bone tools, a bow and arrow, beads and pendants made from dog canine teeth. The teeth of dogs, wolves and bears have been used to make personal jewellery since Palaeolithic times. Whether these were just decorative or more probably, had some kind of significance as talismans or totems who can tell?



*Houses at Pfahlbau Museum, Bodensee.*<sup>11</sup>

The Lake Dwellers did not rely only on imported ceramics. Throughout the whole period in which these settlements flourished — until the Iron Age — many different pottery traditions existed in the region depending on the cultural traditions of the village. So

for example, there were villages influenced by the Mediterranean-based cultures, the Cortaillod and Lagozza, so their local pots were round-bottomed compared with those more influenced by the contemporary Pfyn culture (3900–3500 BC) in the east where flat-bottomed wares were preferred. Until the later Corded Ware culture (2750–2400 BC), locally produced pots were mostly undecorated. From 5 to 20 pots were found in the houses, including beakers, jugs, and small cups as well as larger vessels used to store grains.

Pots were used to cook food at the hearth in the houses. The process seems to have been largely slow-cooking of various kinds of cereal in what one archaeologist called “mush”. Wheat of several kinds was known, some of which was used to make simple bread. Other vegetables on the diet included peas, beans, lentils, a number of oil seeds including those of the opium poppy, apples, and berries such as blackberries, rosehips, raspberries and elder. Important too were hazelnuts, a staple food throughout history since the forests returned after the Ice. All these, as with the meat part of the diet, were obtained from both domestic as well as wild sources. However, dairy products (including milk and cheese) were not consumed until about 3400 BC, while meat from domesticated cattle was not part of the daily menu until the cattle-herding Corded Ware culture of 2750–2400 BC.

### **So, what do we know of the descendants of that baby boy of so long ago?**

Well, we know for certain that he eventually had sons and grandsons, all of whom carried the R-U152 gene: I and several million other men are proof of that! But the question I ask is “How did my gene get from Central Europe to northern Scotland and to Nairn in particular?”

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<sup>11</sup> Photo: Wikipedia Public Domain, Gerhard Schaubert, 2005  
[http://en.wikipedia.org/wiki/Pfahlbau\\_Museum\\_Unteruhldingen](http://en.wikipedia.org/wiki/Pfahlbau_Museum_Unteruhldingen)

Geneticists call R-U152 an “invasive” gene and most suggest it was carried to Britain by Vikings, more specifically, by the Jutes from the Jutland Peninsula in Denmark and from that part of southern Norway immediately to the north. That may be so: it certainly seems quite probable in the case of the settlement of what was the Danelaw in England. There was also incursion and extensive settlement in the north-west of Scotland and also to the east along the Moray coast. However, Norse Vikings appear not to have troubled the Nairn part of the coast very often and there was no settlement there as there clearly was, for example, in Sutherland or in Orkney and Shetland to the north.

Given that R-S28/U152 is found today in north-western France, in what was Flanders and Normandy, it is possible the gene was carried to Britain by the knights and men who accompanied William the Conqueror in 1066 and the many later Norman immigrants who followed in the next century or two. Some of these men were given lands in the north of England, the founder of Clan Hay — William de la Haya — among them where he was the neighbour (and later, son-in-law) of the very powerful Ranulph de Soulis, Lord of Liddesdale. He was later invited into Scotland where he became the “cup bearer” (or “butler”)<sup>12</sup> to both King Malcolm IV and his successor, William the Lion. William de la Haya and his descendants were given extensive land grants in both Perthshire and later, in Aberdeenshire and royal honours heaped upon them.

Another William de la Haya, from the cadet branch of this powerful House of Errol, later became the Laird of Lochloy in Nairn and the progenitor of the Hays of Nairn. This is the scenario I favour as the origin of my R-S28/U152 in Nairnshire....But that the Normans were the carriers is a long way from being proven.

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<sup>12</sup> This means he was the manager or CEO of the royal household