

Dragon Precession

## R1b

[http://www.isogg.org/tree/ISOGG\\_HapgrpR.html](http://www.isogg.org/tree/ISOGG_HapgrpR.html)

### **Y-DNA Haplogroup R and its Subclades - 2011**

The entire work is identified by the Version Number and date given on the [Main Page](#). Directions for citing the document are given at the bottom of the [Main Page](#).

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Because of continuing research, the structure of the Y-DNA Haplogroup Tree changes and ISOGG does its best to keep the tree updated with the latest developments in the field. The viewer may observe other versions of the tree on the Web. Email [Alice Fairhurst](#) if the differences need clarification or if you find any broken links on this page.

**IMPORTANT NOTICE** Effective 21 March 2011, the majority of the clade names in Haplogroup R were updated. We recognize this is a disruption to the user community, and apologize for the inconvenience. The background for the changes is detailed [here](#).

On 5 March 2011, Family Tree DNA (FTDNA) announced a major revision to the Y haplotree which they use for defining haplogroups, as well as determining which SNPs are a part of their standard "deep clade" tests. *Family Tree DNA, in partnership with the YCC, periodically reviews known SNPs in order to evaluate those that meet the requirements to be added to the haplotree. The SNPs that passed this review are now included in the haplotree and considered for deep clade testing.*

For most haplogroups, the differences between the current ISOGG 2011 haplotree and the new FTDNA 2011 haplotree were minor and readily resolved. However, for Haplogroup R, there were a number of differences, falling into three general categories.

#### **1. SNPs present on the ISOGG tree that are not included on the FTDNA tree.**

FTDNA's cutoff for new SNPs was quite some time ago, due to their lead time requirements for making database and web page modifications, and they did not have the opportunity to incorporate the very latest SNP developments. The new SNPs remain on the ISOGG tree.

#### **2. SNPs present on the FTDNA tree that were not included on the ISOGG tree.**

These were primarily "private" SNPs. ISOGG normally does not include SNPs unless there are clearly multiple derived examples found among unrelated people. Typically, this would be three or more people, where there is a minimum of a 15% haplotype variation between them. FTDNA uses a different standard for inclusion, and as a result they included additional private SNPs on their 2011 Haplotree that were not on the ISOGG tree. To reduce the possibility of confusion

due to arbitrary differences between the two trees, the additional private SNPs have also been included on the ISOGG 2011 tree in most cases, and are color-coded and marked as private.

### 3. Ordering of SNPs within the haplotree.

ISOGG normally adds new clades at the end of the list of their peer clades, in order to minimize the disruption to existent clade names. FTDNA and YCC follow the academic practice of listing clades in the order of the discovery of the SNPs. As result, there were significant differences in the order of the SNPs in several areas of the Haplogroup R tree, which caused the clade based haplogroup names to also differ. After careful consideration, ISOGG chose to adopt the ordering used by FTDNA and **YCC** in order to minimize arbitrary differences that would contribute to confusion in the genetic genealogy community. The expectation is that the next **YCC** update will also reflect this ordering, and since the **YCC** tree is widely used by the academic community, conforming to their ordering will help minimize terminology differences between the ISOGG tree and academic papers.

**Due to the preponderance of Haplogroup R among peoples of European and SW Asian descent, a disproportionate amount of Haplogroup R research and testing is done. As a result, there are typically more discoveries, and more disruptions, to the structure of the Haplogroup R tree. In particular, clade based haplogroup names (e.g. R1b1b2), which are based on the structure of the haplotree, as well as the ordering of SNPs within the tree, are especially sensitive to change in the Haplogroup R tree. Using mutation based haplogroup names (e.g. R-M269) is preferable in Haplogroup R, as a mutation based name will not be affected by changes in the tree structure or SNP ordering. FTDNA refers to the mutation based name as the "shorthand" name.**

**R1b is the most common haplogroup in Western Europe, reaching over 80% of the population in Ireland, the Scottish Highlands, western Wales, the Atlantic fringe of France and the Basque country. It is also common in Anatolia and around the Caucasus, in parts of Russia and in Central and South Asia. Besides the Atlantic and North Sea coast of Europe, hotspots include the Po valley in north-central Italy (over 70%), the Ossetians of the North Caucasus (over 40%) and nearby Armenia (35%), the Bashkirs of the Urals region of Russia (50%), Turkmenistan (over 35%), the Hazara people of Afghanistan (35%), the Uyghurs of North-West China (20%) and the Newars of Nepal (11%). R1b-V88, a subclade specific to sub-Saharan Africa, is found in 60 to 95% of men in northern Cameroon.**

#### *Anatolian or Caucasian origins ?*

The origins of R1b are not entirely clear to this day. Some of the oldest forms of R1b are found in the Near East and around the Caucasus. Haplogroup R1\* and R2\* might have originated in southern Central Asia (between the Caspian and the Hindu Kush). A branch of R1 would have developed into R1b\* then R1b1\* in the northern part of the Middle East during the Ice Age. It presumptively moved to northern Anatolia and across the Caucasus during the early Neolithic, where it became R1b1b. The Near Eastern leftovers evolved into R1b1a (M18), now found at low frequencies among the Lebanese and the Druze. The Phoenicians (who came from modern day Lebanon) spread this R1b1a and R1b1\* to their colonies, notably Sardinia and the Maghreb.

**The subclades R1b1b1 and R1b1b2 (the most common form in Europe) are closely associated with the spread of Indo-European languages, as attested by its presence in all regions of the world where Indo-European languages were spoken in ancient times, from the Atlantic coast of Europe to the Indian subcontinent, including almost all Europe (except Finland and Bosnia-Herzegovina), Anatolia, Armenia, European Russia, southern Siberia, many pockets around Central Asia (notably Xinjiang, Turkmenistan, Tajikistan and Afghanistan), without forgetting Iran, Pakistan, India and Nepal. The history of R1b and R1a are intricately connected to each others. Whereas R1b1 is found in such places as the Levant or Cameroon, R1b1b mostly likely originated in north-eastern Anatolia.**

#### *The North Caucasus and the Pontic-Caspian steppe : the Indo-European link*

Modern linguists have placed the Proto-Indo-European homeland in the Pontic-Caspian steppe, a distinct geographic and archeological region extending from the Danube estuary to the Ural mountains to the east and North Caucasus to

the south. The Neolithic, Eneolithic and early Bronze Age cultures in Pontic-Caspian steppe has been called the **Kurgan culture** (7000-2200 BCE) by **Marija Gimbutas**, due to the lasting practice of burying the deads under mounds ("kurgan") among the succession of cultures in that region. Horses were first domesticated around 4000 BCE in the steppe, perhaps somewhere around the Don or the lower Volga, and soon became a defining element of steppe culture. During the Bronze-age period, known as the **Yamna horizon** (3300-2500 BCE), the cattle and sheep herders adopted wagons to transport their food and tents, which allowed them to move deeper into the steppe, giving rise to a new mobile lifestyle that would eventually lead to the great Indo-European migrations.

The Pontic-Caspian steppe cultures can be divided in a western group, ranging from the Don River to the Dniester (and later Danube), and an eastern one, in the Volga-Ural region. The Pontic steppe was probably inhabited by men of mixed R1a and R1b lineages, with higher densities of R1b just north of the Caucasus, and more R1a in the the northern steppes and the forest-steppes.

**R1b almost certainly crossed over from northern Anatolia to the Pontic-Caspian steppe. It is not clear whether this happened before, during or after the Neolithic. A regular flow of R1b across the Caucasus cannot be excluded either. The genetic diversity of R1b being greater around the Caucasus, it is hard to deny that R1b settled and evolved there before entering the steppe world.** Does that mean that Indo-European languages originated in the steppes with R1a people, and that R1b immigrants blended into the established culture ? Or that Proro-Indo-European language appear in northern Anatolia or in the Caucasus, then spread to the steppes with R1b ? Or else did Proro-Indo-European first appear in the steppe as a hybrid language of Caucasian/Anatolian R1b and steppe R1a ? This question has no obvious answer, but based on the antiquity and archaic character of the Anatolian branch (Hittite, Palaic, Luwian, Lydian, and so on) an northern Anatolian origin of Proto-Indo-European is credible. Furthermore, there is documented evidence of loan words from Caucasian languages in Indo-European languages. This is much more likely to have happened if Proto-Indo-European developed near the Caucasus than in the distant steppes. R1b would consequently have been the spreading factor of PIE to the steppes, and from there to Europe, Central Asia and South Asia.

*The Maykop culture, the R1b link to the steppe ?*

The **Maykop culture** (3700-2500 BCE), in the North Caucasus, was culturally speaking a sort of southern extension of the Yamna horizon. Although not generally considered part of the Pontic-Caspian steppe culture due to its geography, the North Caucasus had close links with the steppe, as attested by numerous ceramics, gold, copper and bronze weapons and jewelry in the contemporaneous cultures of Mikhaylovka, Sredny Stog and Kemi Oba. The link between the North Pontic and North Caucasus is older than the Maykop period. Its predecessor, the Svobodnoe culture (4400-3700 BCE), already had links to the Suvorovo-Novodanilovka and early Sredny Stog cultures, and the even older Nalchik settlement (5000-4500 BCE) displayed a similar culture as Khvalynsk on the Volga. This may be the period when R1b started interacting and blending with the R1a population of the steppes.

The Yamna and Maykop people both used kurgan burials, with their deads in a supine position with raised knees and oriented in a north-east/south-west axis. Graves were sparkled with red ochre on the floor, and sacrificed domestic animal buried alongside humans. They also had in common horse riding, wagons, a cattle- and sheep-based economy, the use of copper/bronze battle-axes (both hammer-axes and sleeved axes) and tanged daggers. In fact, the oldest wagons and bronze artefacts are found in the North Caucasus, and spread from there to the steppes.

Maykop was an advanced Bronze Age culture, actually one of the very first to develop metalworking, and therefore metal weapons. The world's oldest sword was found at a late Maykop grave in Klady kurgan 31. Its style is reminiscent of the long Celtic swords, though less elaborated. Horse bones and depictions of horses already appear in early Maykop graves, suggesting that the Maykop culture might have been founded by steppe people or by people who had close link with them. However, the presence of cultural elements radically different from the steppe culture in some sites could mean that Maykop had a hybrid population. Without DNA testing it is impossible to say if these two populations were an Anatolian R1b group and a G2a Caucasian group, or whether R1a people had settled there two. The two or three ethnicities might even have cohabited side by side in different settlements. Typical Caucasian Y-DNA lineages (such as G2a) do not follow the pattern of Indo-European migrations, so intermarriages must have been limited, or at least restricted to Indo-European men taking Caucasian wives rather than the other way round.

Maykop people are the ones credited for the introduction of primitive wheeled vehicles (wagons) from Mesopotamia to the steppes. This would revolutionise the way of life in the steppe, and would later lead to the development of (horse-drawn) war chariots around 2000 BCE. Cavalry and chariots played a vital role in the subsequent Indo-European migrations, allowing them to move quickly and defeat easily anybody they encountered. Combined with advanced bronze weapons and their sea-based culture, **the western branch (R1b) of the Indo-Europeans from the Black Sea shores are excellent candidates for being the mysterious Sea Peoples, who raided the eastern shores of the Mediterranean during the second millennium BCE.**

The rise of the IE-speaking Hittites in Central Anatolia happened a few centuries after the disappearance of the Maykop culture. A back migration from the North Caucasus to northern Anatolia is very likely in this age of expansion. What is certain is that the Hittites used chariots, invented in the Volga-Ural steppes. R1a being found at low frequencies in Armenia and northern Anatolia, it is not unreasonable to imagine that a hybrid group of R1a-R1b from the Volga-Ural region migrated to this region sometime between 2000 BCE and 1650 BCE. The Maykop and Yamna cultures were succeeded by the **Strubna culture** (1600-1200 BCE), possibly representing an advance of R1a1a people from the northern and eastern steppes towards the Black Sea shores.

### *The European branch*

The Indo-Europeans' bronze weapons and horses would have given them a tremendous advantage over the autochthonous inhabitants of Europe, namely the native haplogroup I (descendant of Cro-Magnon), and the early Neolithic herders and farmers (G2a, J2, E-V13 and T). This allowed R1a and R1b to replace (=> see [How did R1b come to replace most of the older lineages in Western Europe ?](#)) most of the native male lineages, although female lineages seem to have been less affected.

A comparison with the Indo-Iranian invasion of South Asia shows that 40% of the male lineages of northern India are R1a, but less than 10% of the female lineages could be of Indo-European origin. The impact of the Indo-Europeans was more severe in Europe because European society 4,000 years ago was less developed in terms of agriculture, technology (no bronze weapons) and population density than that of the **Indus Valley civilization**. This is particularly true of the native Western European cultures where farming arrived much later than in the Balkans or central Europe. Greece, the Balkans and the Carpathians were the most advanced of European societies at the time and were the least affected in terms of haplogroup replacement. Native European Y-DNA haplogroups (I1, I2a, I2b) also survived better in regions that were more difficult to reach or less hospitable, like Scandinavia, Brittany, Sardinia or the Dinaric Alps.

**The first forays of steppe people into the Balkans happened between 4200 BCE and 3900 BCE, when horse riders crossed the Dniester and Danube and apparently destroyed the towns of the Gumelnita, Varna and Karanovo VI cultures in Eastern Romania and Bulgaria. A climatic change resulting in colder winters during this exact period probably pushed steppe herders to seek milder pastures for their stock, while failed crops would have led to famine and internal disturbance within the Danubian and Balkanic communities.** The ensuing **Cernavoda culture** (4000-3200 BCE) and **Ezero culture** (3300-2700 BCE) seems to have had a mixed population of steppe immigrants and people from the old tell settlements. These steppe immigrants were likely a mixture of both R1a and R1b lineages. Many Danubian farmers would also have migrated to the Cucuteni-Tripolye towns in the Eastern Carpathians, causing a population boom and a north-eastward expansion until the Dnieper valley, bringing Y-haplogroups E-V13, J2b and T in what is now central Ukraine. This precocious Indo-European advance westward was fairly limited, due to the absence of Bronze weapons and organised army at the time, and was indeed only possible thanks to climatic catastrophes. The Carpathian, Danubian, and Balkanic cultures were too densely populated and technologically advanced to allow for a massive migration.

The Bronze Age announces a very different development. R1a people appear to have been the first to successfully penetrate into the heart of Europe, with the **Corded Ware (Battle Axe) culture** (3200-1800 BCE) as a natural western expansion of the **Yamna culture**. They went as far west as Germany and Scandinavia. **DNA analysis from the Corded Ware culture site of Eulau** confirms the presence of R1a (but not R1b) in central Germany around 2600 BCE. The Corded Ware migrants might well have expanded from the forest-steppe, or the northern fringe of the Yamna culture,

where R1a lineages were prevalent over R1b ones.

R1b1b2 is thought to have arrived in central and western Europe around 2500 BCE, by going up the Danube from the Black Sea coast. The archeological and genetic evidence (distribution of R1b subclades) point at several consecutive waves towards the Danube between 2800 BCE and 2300 BCE (beginning of the Unetice culture). It is interesting to note that this also corresponds to the end of the Maykop culture (2500 BCE) and Kemi Oba culture (2200 BCE) on the northern shores of the Black Sea, and their replacement by cultures descended from the northern steppes. It can therefore be envisaged that the (mostly) R1b population from the northern half of the Black Sea migrated westward due to pressure from other Indo-European people (R1a) from the north, like the burgeoning Proto-Indo-Iranian branch, linked to the contemporary Poltavka and Abashevo cultures.

It is doubtful that the **Beaker culture** (2800-1900 BCE) was already Indo-European (although they were influenced by the Corded Ware culture), because they were the continuity of the native Megalithic cultures. It is more likely that the beakers and horses found across western Europe during that period were the result of trade with neighbouring Indo-European cultures, including the first wave of R1b into central Europe. Nevertheless, it is undeniable that the following **Unetice** (2300-1600 BCE), **Tumulus** (1600-1200 BCE), **Urnfield** (1300-1200 BCE) and **Hallstatt** (1200-750) cultures were linked to the spread of R1b to Europe, as they abruptly introduce new technologies and a radically different lifestyle.

Did the Indo-Europeans really invade Western Europe? Proponents of the Paleolithic or Neolithic continuity model argue that bronze technology and horses could have been imported by Western Europeans from their Eastern European neighbours, and that no actual Indo-European invasion need be involved. It is harder to see how Italic, Celtic and Germanic **languages** were adopted by Western and Northern Europeans without at least a small scale invasion. It has been suggested that Indo-European (IE) languages simply spread through contact, just like technologies, or because it was the language of a small elite and therefore its adoption conferred a certain perceived prestige. However people don't just change language like that because it sounds nicer or more prestigious.

Even nowadays, with textbooks, dictionaries, compulsory language courses at school, private language schools for adults and multilingual TV programs, the majority of the people cannot become fluent in a completely foreign language, belonging to a different language family. The linguistic gap between pre-IE vernaculars and IE languages was about as big as between modern English and Chinese. English, Greek, Russian and Hindi are all related IE languages and therefore easier to learn for IE speakers than non-IE languages like Chinese, Arabic or Hungarian. From a linguistic point of view, only a wide-scale migration of IE speakers could explain the thorough adoption of IE languages in Western Europe - leaving only Basque as a remnant of the Neolithic languages.

One important **archeological** argument in favour of the replacement of Neolithic cultures by Indo-European culture in the Bronze Age comes from **pottery** styles. The sudden appearance of bronze technology in Western Europe coincides with ceramics suddenly becoming more simple and less decorated, just like in the Pontic steppes. Until then, pottery had constantly evolved towards greater complexity and details for over 3,000 years. People do not just decide like that to revert to a more primitive style. Perhaps one isolated tribe might experiment with something simpler at one point, but what are the chances that distant cultures from Iberia, Gaul, Italy and Britain all decide to undertake such an improbable shift around the same time? The best explanation is that this new style was imposed by foreign invaders. In this case it is not mere speculation; there is ample evidence that this simpler pottery is characteristic of the steppes associated with the emergence of Proto-Indo-European speakers.

Besides pottery, archeology provides ample evidence that the early Bronze Age in Central and Western Europe coincides with a radical shift in **food production**. Agriculture experiences an abrupt reduction in exchange for an increased emphasis on domesticates. This is also a period when horses become more common and cow milk is being consumed regularly. The overall change mimicks the steppe way of life almost perfectly. Even after the introduction of agriculture around 5200 BCE, the Bug-Dniester culture and later steppe cultures were characterized by an economy dominated by herding, with only limited farming. This pattern expands into Europe exactly at the same time as bronze working.

**Religious beliefs and arts** undergo a complete reversal in Bronze Age Europe. Neolithic societies in the Near East and Europe had always worshipped female figurines as a form of fertility cult. The steppe cultures, on the contrary, did not manufacture female figurines. As bronze technology spreads from the Danube valley to Western Europe, symbols of fertility and fecundity progressively disappear and are replaced by sculptures of domesticated animals.

Another clue that Indo-European steppe people came in great number to Central and Western Europe is to be found in **burial practices**. Neolithic Europeans either cremated their dead (e.g. Cucuteni-Tripolye culture) or buried them in collective graves (this was the case of Megalithic cultures). In the steppe, each person was buried individually, and high-ranking graves were placed in a funeral chamber and topped by a circular mound. The body was typically accompanied by weapons (maces, axes, daggers), horse bones, and a dismantled wagon (or later chariot). These characteristic burial mounds are known as **kurgans** in the Pontic steppe. Men were given more sumptuous tombs than women, even among children, and differences in hierarchy are obvious between burials. The Indo-Europeans had a strongly hierarchical and patrilinear society, as opposed to the more egalitarian and matrilinear cultures of Old Europe. The proliferation of status-conscious male-dominant kurgans (or tumulus) in Central Europe during the Bronze Age is a clear sign that the ruling elite had now become Indo-European. The practice also spread to Central Asia and Southern Siberia, two regions where R1a and R1b lineages are found nowadays, just like in Central Europe. The ceremony of burial is one of the most emotionally charged and personal aspect of a culture. It is highly doubtful that people would change their ancestral practice "just to do like the neighbours". In fact, different funerary practices have co-existed side by side during the European Neolithic and Chalcolithic.

The ascendancy of yet another constituent of the Pontic steppe culture in the rest of Europe, and in this case one that does not change easily through contact with neighbours, adds up to the likelihood of a strong Indo-European migration. The adoption of *some* elements of a foreign culture tends to happen when one civilization overawes the adjacent cultures by its superiority. This process is called 'acculturation'. However there is nothing that indicates that the steppe culture was so culturally superior as to motivate a whole continent, even Atlantic cultures over 2000 km away from the Pontic steppes, to abandon so many fundamental symbols of their own ancestral culture, and even their own language. In fact, Old Europe was far more refined in its pottery and jewellery than the rough steppe people. The Indo-European superiority was cultural but military, thanks to horses, bronze weapons and an ethic code valuing individual heroic feats in war (these ethic values are known from the old IE texts, like the Rig Veda, Avesta, or the Mycenaean and Hittite literature).

After linguistics and archeology, the third category of evidence comes from **genetics** itself. **It had first been hypothesised that R1b was native to Western Europe, because this is where it was most prevalent. It has since been proven that R1b haplotypes displayed higher microsatellite diversity in Anatolia and in the Caucasus than in Europe. European subclades are also more recent than Middle Eastern or Central Asian ones. The main European subclade, R-P312/S116, only dates back to approximately 3500 to 3000 BCE. It does not mean that the oldest common ancestor of this lineage arrived in Western Europe during this period, but that the first person who carried the mutation R-P312/S116 lived at least 5,000 years ago, assumably somewhere in the lower Danube valley or around the Black Sea. In any case this timeframe is far too recent for a Paleolithic origin or a Neolithic arrival of R1b.**

**The discovery of what was thought to be "European lineages" in Central Asia, Pakistan and India hit the final nail on the coffin of a Paleolithic origin of R1b in Western Europe, and confirmed the Indo-European link.**

**All the elements concur in favour of a large scale migration of horse-riding Indo-European speakers to Western Europe between 2500 to 2100 BCE, contributing to the replacement of the Neolithic or Chalcolithic lifestyle by a inherently new Bronze Age culture, with simpler pottery, less farming, more herding, new rituals (single graves) and new values (patrilinear society, warrior heroes) that did not evolve from local predecessors.**

These Proto-Italo-Celto-Germanic R1b people had settled around the Alps by 2300 BCE, and judging from the spread of bronze working, reached Iberia by 2250 BCE, Britain by 2100 BCE and Ireland by 2000 BCE. This first wave of R1b

assumably carried **R1b-L21** lineages in great number, as these are found everywhere in western, northern and central Europe. A second R1b expansion took place from the Urnfield/Hallstatt culture around 1200 BCE, pushing west to the Atlantic, north to Scandinavia, and as far east as Greece and Anatolia (=> see Dorian invasion below).

The new Bronze Age culture flourished around the Alps (Unetice to early Hallstatt) thanks to the abundance of metal in the region, and laid the foundation for the classical Celtic culture. The Celtic Iron Age (late Hallstatt, from 800 BCE) may have been brought through preserved contacts with the steppes and the North Caucasus, notably the **Koban culture** (1100-400 BCE).

The Alpine Celts of the Hallstatt culture are associated with the **S28 (a.k.a. U152)** mutation, although not exclusively. The Italic branch (also S28/U152) is thought to have entered Italy by 1200 BCE, but there were certainly several successive waves, as attested by the later arrival of the Cisalpine Celts. The Belgae were another S28/U152 branch, an extension of the La Tène culture northward, following the Rhine, Moselle and Meuse rivers.

One common linguistic trait between Italic and Gaulish/Brythonic Celtic languages linked to the Hallstatt expansion is that they shifted the original IE *\*kw* sound into *\*p*. They are known to linguists as the P-Celtic branch. It is thought that this change occurred due to the inability to pronounce the *\*kw* sound by the pre-Indo-European population of central Europe, Gaul and Italy, who were speakers of Afro-Asiatic dialects that had evolved from a Near-Eastern language. The Etruscans, although later incomers from the Levant, also fit in this category. It has recently been acknowledged that Celtic languages borrowed part of their grammar from Afro-Asiatic languages. This shift could have happened when the Proto-Italo-Celtic speakers moved from the steppes to the Danube basin and mixed with the population of Near-Eastern farmers belonging to haplogroups E-V13, T, G2a and J2b. However, such an early shift would not explain why Q-Celtic languages developed in Ireland and Iberia. It is more plausible that the shift happened after the Italo-Celts had first expanded across all western Europe. The S28/U152 connection to P-Celtic suggests that the shift took place around the Alps and Italy after 1200 BCE.

**R1b-S21 (a.k.a. U106)** is found at high concentrations in the Netherlands and northern Germany. Its presence in other parts of Europe can be attributed to the 5th- and 6th-century Germanic migrations. The Frisians and Saxons spread this haplogroup to the British Isles, the Franks to Belgium and France, and the Lombards to Austria and northern Italy. The high concentration of S21/U106 around Austria hints that it could have originated there in the Hallstatt period, or originated around the Black Sea and moved there during the Hallstatt period. In fact, southern Germany and Austria taken together have the highest diversity of R1b in Europe. Besides S21, the three major first level subclades of R1b1b2a1b (L21, S28, M167) are found in this area at reasonable frequencies to envisage a spread from the Unetice to Hallstatt homeland to the rest of western Europe.

=> *Trivia* : **Kings of many European countries** have been confirmed to be R1b through genetic genealogy.

How did R1b come to replace most of the older lineages in Western Europe ?

Until recently it was believed that R1b originated in Western Europe due to its strong presence in the region today. The theory was that R1b represented the Paleolithic Europeans (Cro-Magnon) that had sought refuge in the Franco-Cantabrian region at the peak of the last Ice Age, then recolonised Central and Northern Europe once the ice sheet receded. The phylogeny of R1b proved that this scenario was not possible, because older R1b clades were consistently found in Central Asia and the Middle East, and the youngest in Western and Northern Europe. There was a clear gradient from East to West tracing the migration of R1b people (see map above). This age of the main migration from the shores of the Black Sea to Central Europe also happened to match the timeframe of the Indo-European invasion of Europe, which coincides with the introduction of the Bronze-Age culture in Western Europe, and the spread of Italo-Celtic and Germanic languages.

Historians and archeologists have long argued whether the Indo-European migration was a massive invasion, or rather a cultural diffusion of language and technology spread only by a small number of incomers. The answer could well be "neither". Proponents of the diffusion theory would have us think that R1b is native to Western Europe, and R1a alone represent the Indo-Europeans. The problem is that haplogroup R did arise in Central Asia, and R2 is still restricted to

Central and South Asia, while R1a and the older subclades of R1b are also found in Central Asia. The age of R1b subclades in Europe coincide with the Bronze-Age. R1b must consequently have replaced most of the native Y-DNA lineages in Europe from the Bronze-Age onwards.

However, a massive migration and nearly complete annihilation of the Paleolithic population can hardly be envisaged. **Western Europeans do look quite different in Ireland, Holland, Aquitaine or Portugal, despite being all regions where R1b is dominant. Autosomal DNA studies have confirmed that the Western European population is far from homogeneous. A lot of maternal lineages (mtDNA) also appear to be of Paleolithic origin (e.g. H1, H3, U5 or V) based on ancient DNA tests. What a lot of people forget is that there is also no need of a large-scale exodus for patrilineal lineages to be replaced fairly quickly. Here is why.**

1. **Polygamy.** Unlike women, men are not limited in the number of children they can procreate. Men with power typically have more children. This was all the truer in primitive societies, where polygamy was often the norm for chieftains and kings.
2. **Status & Power.** Equipped with Bronze weapons and horses, the Indo-Europeans would have easily subjugated the Neolithic farmers and with even greater ease Europe's last hunter-gatherers. If they did not exterminate the indigenous men, the newcomers would have become the new ruling class, with a multitude of local kings, chieftains and noblemen (Bronze-Age Celts and Germans lived in small village communities with a chief, each part of a small tribe headed by a king) with higher reproductive opportunities than average.
3. **Gender imbalance.** Invading armies normally have far more men than women. Men must therefore find women in the conquered population. Wars are waged by men, and the losers suffer heavier casualties, leaving more women available to the winners.
4. **Aggressive warfare.** The Indo-Europeans were a warlike people with a strong heroic code emphasising courage and military prowess. Their superior technology (metal weapons, wheeled vehicles and warhorses) and attitude to life would have allowed them to slaughter any population that did not have organised armies with metal weapons (i.e. anybody except the Middle-Eastern civilizations).
5. **Genetic predisposition to conceive boys.** The main role of the Y-chromosome in man's body is to create sperm. Haplogroups are determined based on mutations differentiating Y-chromosomes. Each mutation is liable to affect sperm production and sperm motility. **Preliminary research has already established a link between certain haplogroups and increased or reduced sperm motility. The higher the motility, the higher the chances of conceiving a boy. It is absolutely possible that R1b could confer a bias toward more male offspring. Even a slightly higher percentage of male births would significantly contribute to the replacement of other lineages with the accumulation effect building up over a few millennia.** Not all R1b subclades might have this boy bias. The bias only exist in relation to other haplogroups found in a same population. It is very possible that the fairly recent R1b subclades of Western Europe had a significant advantage compared to the older haplogroups in that region, notably haplogroup I2 and E-V13. [Read more](#)

Replacement of patrilineal lineages following this model quickly becomes exponential. Imagine 100 Indo-European men conquering a tribe of 1000 indigenous Europeans (a ratio of 1:10). War casualties have resulted in a higher proportion of women in the conquered population. Let's say that the surviving population is composed of 700 women and 300 men. Let's suppose that the victorious Indo-European men end up having twice as many children reaching adulthood as the men of the vanquished tribe. There is a number of reason for that.

The winners would take more wives, or take concubines, or even rape women of the vanquished tribe. Their higher status would guarantee them greater wealth and therefore better nutrition for their offspring, increasing the chances of reaching adulthood and procreating themselves. An offspring ratio of 2 to 1 for men is actually a conservative estimate, as it is totally conceivable that Bronze-Age sensibilities would have resulted in killing most of the men on the losing side, and raping their women (as attested by the Old Testament).

Even so, it would only take a few generations for the winning Y-DNA lineages to become the majority. For instance, if the first generation of Indo-Europeans had two surviving sons per man, against only one per indigenous man, the number of Indo-European paternal lineages would pass to 200 individuals at the second generation, 400 at the third, 800 at the fourth and 1600 at the fifth, and so on. During that time indigenous lineages would only stagnate at 300



individuals for each generation. Based on such a scenario, the R1b lineages would have quickly overwhelmed the local lineages. Even if the Indo-European conquerors had only slightly more children than the local men, R1b lineages would become dominant within a few centuries. Celtic culture lasted for over 1000 years in Continental Europe before the Roman conquest putting an end to the privileges of the chieftains and nobility. This is more than enough time for R1b lineages to reach 50 to 80% of the population.

The present-day R1b frequency forms a gradient from the Atlantic fringe of Europe (highest percentage) to Central and Eastern Europe (lowest), the rises again in the Anatolian homeland. This is almost certainly because agriculture was better established in Eastern, then Central Europe, with higher densities of population, leaving R1b invaders more outnumbered than in the West. Besides, other Indo-Europeans of the Corded Ware culture (R1a) had already advanced from modern Russia and Ukraine as far west as Germany and Scandinavia. It would be difficult for R1b people to rival with their R1a cousins who shared similar technology and culture. The Pre-Celto-Germanic R1b would therefore have been forced to settled further west, first around the Alps, then overtaking the then sparsely populated Western Europe.

### *The Greco-Anatolian branch*

The Hittites (2000-1200 BCE) were the first Indo-Europeans to defy (and defeat) the mighty Mesopotamian and Egyptian empires. The Hittite ruling class was plausibly an offshoot of the late Maykop culture that conquered the Hattian kingdom. The northern Anatolians may also have been the original Indo-European speakers people who later founded the Maykop culture and spread their language and culture to the Pontic-Caspian steppes. Whichever way, northern Anatolian Bronze-Age Indo-European speakers would surely have belonged in great part to haplogroup R1b1b (and subclades). The Hattians might have had some older Middle-Eastern R1b mixed with the other haplogroups common in Anatolia nowadays (E-M78, G2a and J2).

Troy could well have been a Indo-European colony securing the trade routes between the Black Sea and the Aegean. The Trojans were Luwian speakers related to the Hittites (hence Indo-European), with proven cultural ties to the culture of the Pontic-Caspian steppe. The first city of Troy dates back to 3000 BCE, right in the middle of the Maykop period, and exactly at the time the first galleys were made. **Considering the early foundation of Troy, the most likely of the two Indo-European paternal haplogroups would be R1b1b, not R1a1a.**

The great upheavals circa 1200 BCE was a turning point in European and Near-Eastern history. In central Europe, the Urnfield culture evolved into the **Hallstatt culture**, traditionally associated with the classical **Celtic civilization**, which was to have a crucial influence on the development of ancient Rome. In Italy, the Terramare culture comes to an end with the Italo-Celtic invasions. A distinct new culture emerges in Etruria with the arrival of settlers from the Near East, the **Etruscans**. In the Pontic steppes, the Srubna culture let place to the **Cimmerians**, a nomadic people speaking an Iranian or Thracian language. The Iron-age **Colchian culture** (1200-600 BCE) starts in the North Caucasus region. Its further expansion to the south of the Caucasus correspond to the first historical mentions of the Proto-Armenian branch of Indo-European languages (circa 1200 BCE). In the central Levant the **Phoenicians** start establishing themselves as significant maritime powers and building their commercial empire around the southern Mediterranean.

But the most important event of the period was incontestably the destruction of the Near-Eastern civilizations, possibly by the **Sea Peoples**. **The great catastrophe that ravaged the whole Eastern Mediterranean from Greece to Egypt circa 1200 BCE [Santorini volcano] is a subject that remains controversial.** The identity of the Sea Peoples [Minoans] has been the object of numerous speculations. What is certain is that all the palace-based societies in the Near-East were abruptly brought to an end by tremendous acts of destruction, pillage and razing of cities. The most common explanation is that the region was invaded by technologically advanced warriors from the north, probably Indo-Europeans descended from the steppes via the Balkans.

The Hittite capital Hattusa was destroyed in 1200 BCE, and by 1160 BCE the Empire had collapsed. The Mycenaean cities were ravaged and abandoned throughout the 12th century BCE, leading to the eventual collapse of Mycenaean civilization by 1100 BCE. The kingdom of **Ugarit** in Syria was annihilated and its capital never resettled. Other cities in

the Levant, Cyprus and Crete were burned and left abandoned for many generations. The Egyptians had to repel assaults from the **Philistines** **Libyans** from the West - two tribes of supposed Indo-European origin. The Lybian were accompanied by mercenaries from northern lands (the Ekweh, Teresh, Lukka, Sherden and Shekelesh), whose origin is uncertain, but has been placed in Anatolia, Greece and/or southern Italy.

The devastation of Greece followed the legendary Trojan War (1194-1187 BCE). It has been postulated that the Dorians, and Indo-European people from the Balkans (probably coming from modern Bulgaria or Macedonia), invaded a weakened Mycenaean Greece after the Trojan War, and finally settled in Greece as one of the three major ethnic groups.

Another hypothesis is that the migration of the Illyrians from north-east Europe to the Balkans displaced previous Indo-European tribes, namely the Dorians to Greece, the Phrygians to north-western Anatolia and the Libu to Libya (after a failed attempt to conquer the Delta region of Egypt). The Philistines, perhaps displaced from Anatolia, finally settled in Palestine around 1200 BCE, unable to enter Egypt.

**Greek R1b comes in many varieties: R1b1 from the Near-East, R1b1b from Anatolia, and the European R1b1b2, including the Proto-Celtic S116/P312 and Hallstatt Celtic S28/U152. The presence of R1b1b2 in Greece could be attributed to the Dorian invasion, thought to have happened in the 12th century BCE.** The Dorians could have been related to the Trojans and the Hittites belonging to the oldest Indo-European linguistic branch, or to the Proto-Celts of central Europe and the Danube valley. One way or the other, their Y-DNA lineages would have been predominantly R1b1b or R1b1b2. The Dorians could be the descendants of the first (R1b) steppe nomads who settled in the Eastern Balkans (Cernavoda and Ezero cultures) and did not continue their migration up the Danube to central and western Europe.

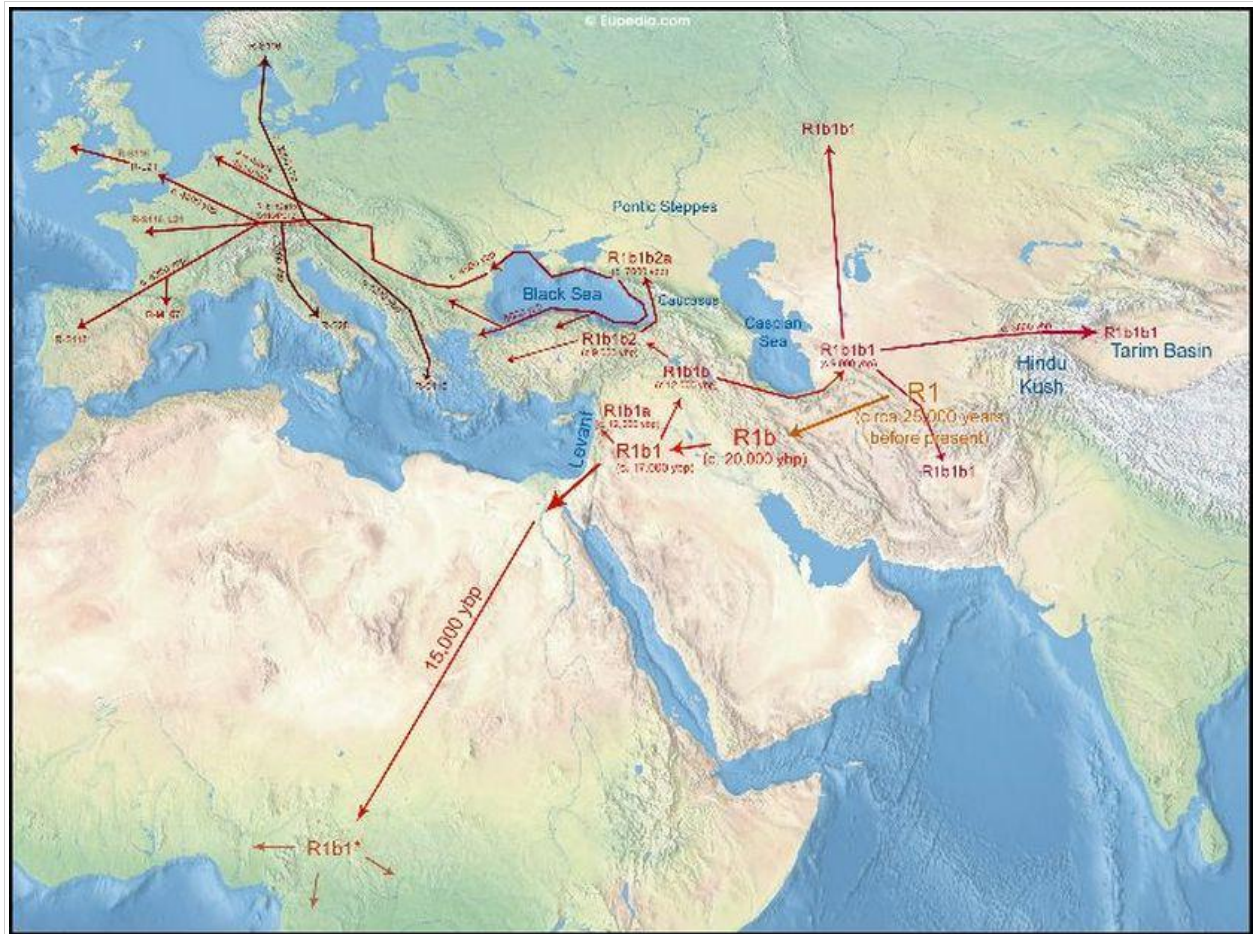
Greek and Anatolian R1b-S28 lineages could be attributed to the Celtic invasions of the 3rd century BCE, but more probably to the Roman occupation. Older clades of R1b, such as R1b1 or R1b1a are only a small minority and would have come along E1b1b and J2 with the Neolithic farmers from the Levant. The Mycenaeans could have brought some R1b1b2 to Greece, but their origins can be traced back to the Seima-Turbino culture of the northern forest-steppe, which would make them primarily an R1a1a tribe.

#### *The Central Asian branch*

**An early group of R1b1b people is thought to have migrated from Caspian Sea region to Central Asia, where it evolved into the R1b1b1 (M73) branch. This variety of R1b occurs almost exclusively in very specific Central Asian populations. The highest percentages were observed among the Uyghurs (20%) of Xinjiang in north-west China, the Hazara people of Afghanistan (32%), and the Bashkirs (55%) of the Abzelilovsky district of Bashkortostan in Russia (border of Kazakhstan).**

**Central Asian R1b1b1 could correspond to the Tocharian branch of the Indo-Europeans. It is possible that the Tocharians split from the main R1b body as early as 7,000 BCE.** Over the centuries some groups of these nomadic tribes ended up around the southern Urals, others in the Tarim Basin (Xinjiang) or in southern Central Asia. Another theory is that a group of early horse riders from the Repin culture (3700-3300 BCE) migrated from the Don-Volga region to the Altai mountain, founding the **Afanasevo culture** (c. 3600-2400 BCE), then moved south to the Tarim Basin.

**Mummies of fair-haired Caucasian people** were found in the Tarim Basin, the oldest of which date back to 1800 BCE. The modern inhabitants of the Tarim Basin, the Uyghurs, belong both to this R1b-M73 subclade (about 20%) and to R1a1 (about 30%). This could mean that they had become a hybrid R1b-R1a society by the time they reached the Tarim Basin. But R1a1 could also have arrived independently during the later Indo-Iranian migrations (approx. 2000 BCE), or much later through some nomadic Scytho-Iranian tribes (after 700 BCE).

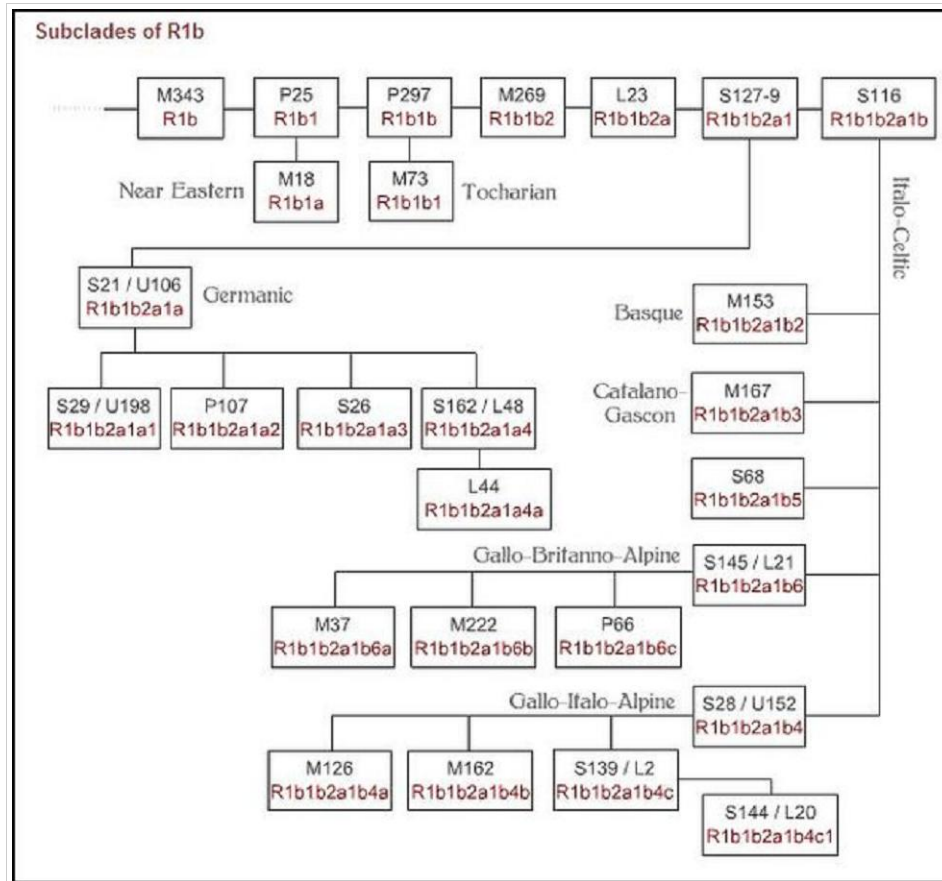


### Back migrations

The earliest known back migration of R1b was from Asia to Africa and took place around 15,000 years ago. A group of R1b1\* people moving from the Levant to Egypt, Sudan and spreading in different directions inside Africa to Rwanda, South Africa, Namibia, Angola, Congo, Gabon, Equatorial Guinea, Cameroon, Nigeria, Ivory Coast, Guinea-Bissau. The hotspot is Cameroon. R1b1\* was observed at a frequency of up to 95% in some tribes of northern Cameroon (like the [Kirdi](#)), and about 15% nationwide. It is in all likelihood where the early R1b people first settled, then spread south and east along the coast. Other back migrations occurred from Europe to the Near East and Central Asia during the Antiquity and Middle Ages. R1b-S28 was found in Romania, Turkey and at the border of Kazakhstan and Kyrgyzstan. Some of it was surely brought by the Alpine Celts (Hallstatt/La Tène culture), known to have advanced along the Danube, and created the [Galatian kingdom](#) in central Anatolia. The rest could just as well be Roman, given that R1b-S28 is the dominant form of R1b in the Italian peninsula. Some have hypothesized that Roman legions went as far as Central Asia or China and never came back, leaving their genetic marker in isolated pockets. See also [Were the Romans and the Alpine Celts close cousins ?](#)


A small percentage of Western European R1b subclades were also found among Christian communities in Lebanon. They are most likely descendants of the crusaders.

**NOTE: The old R1b1b2 is now R1b1a2 is now FTDNA's new labeling system...**



Defining mutation	Subclade (previous name)	Time of origin (approximate)	Place of highest frequency	Most prevalent ancient ethnic group
M18	<b>R1b1a</b> (R1b1a)	11,000 ybp	Levant, Sardinia	Phoenician, Druze
M73	<b>R1b1b1</b> (R1b1b)	9,500 ybp	Central Asia	Eastern Indo-Europeans, Tocharian
M269	<b>R1b1b2</b> (R1b1c)	9,500 ybp	Western Europe	Western Indo-Europeans, Anatolians
L23/S141	<b>R1b1b2a</b>	7,000 ybp	Western Europe	Western Indo-Europeans (Centum + Anatolian branches)
L11/S127, P311/S128, P310/S129	<b>R1b1b2a1</b>	6,000 ybp	Western Europe	Western Indo-Europeans (Italo-Celto-Germanic branch)
<b>M405/S21/U106</b>	<b>R1b1b2a1a</b> (R1b1c9)	3,500 ybp	Frisia, Benelux, England, Austria, northern Italy	West Germanic (Frisian, Anglo-Saxon, Lombard)
M467/S29/U198	<b>R1b1b2a1a1</b> (R1b1c9b)	1,800 ybp	Southern England + northern Germany	Germanic (Anglo-Saxon)
P107	<b>R1b1b2a1a2</b>	1,800 ybp		Germanic
L1/S26	<b>R1b1b2a1a3</b> (R1b1c9a)	1,800 ybp	Southern & eastern England, Norway, southern Germany, and Spain	Germanic
L48	<b>R1b1b2a1a4</b>			Germanic
L44 => L47	<b>R1b1b2a1a4a</b>			Germanic
L5	<b>R1b1b2a1a5</b>	1,800 ybp		Germanic
L6	<b>R1b1b2a1a6</b>	1,800 ybp		Germanic
<b>P312/S116</b>	<b>R1b1b2a1b</b>	5,300 ybp	Western Europe	Italo-Celtic
<b>M65</b>	<b>R1b1b2a1b1</b> (R1b1c2)	3,500 ybp	Basque country	Basque
<b>M153</b>	<b>R1b1b2a1b2</b> (R1b1c4)	3,350 ybp	Basque country and Gascony	Basque
<b>M167/SRY2627</b>	<b>R1b1b2a1b3</b> (R1b1c6)	2,850 ybp	Spain (esp. Catalonia), western France, south-western Germany	Atlantic Celts, Suebi
<b>S28/U152</b>	<b>R1b1b2a1b4</b> (R1b1c10)	3,500 ybp	Rhine & Meuse region, Alps, northern Italy	Alpine Celts (Hallstatt-La Tène), Italics

M126	<b>R1b1b2a1b4a</b> (R1b1c3)	2,500 ybp	Found in Germany, England and Ireland	Celtic
M160	<b>R1b1b2a1b4b</b> (R1b1c5)	2,000 ybp	Found in Germany and Switzerland	Alpine Celtic
L2/S139	<b>R1b1b2a1b4c</b>	2,500 ybp	Found in Italy, Germany, Belgium, Britain, Ireland, Norway	Alpine Celtic
L20/S144	<b>R1b1b2a1b4c1</b>	1,800 ybp	Found in England, France and Italy	Alpine Celtic
M228	<b>R1b1b2a1b4c1a</b>		Found in northern Italy	Alpine Celtic
L3	<b>R1b1b2a1b4c2</b>		Found in Germany and England	Alpine Celtic
L4	<b>R1b1b2a1b4d</b>		Found in Latvia and Poland	
<b>L165/S68</b>	<b>R1b1b2a1b5</b> (R1b1c11)	3,500 ybp	Sweden and Scotland	Germanic
<b>L21/S145</b>	<b>R1b1b2a1b6</b>	4,000 ybp	Ireland, Britain, France, Germany, Benelux, south-west Norway	Brythonic, Gaelic and Gaulish Celtic, West Germanic
M37	<b>R1b1b2a1b6a</b> (R1b1c1)	3,000 ybp	Ireland, Britain, France, Germany	Celtic
M222	<b>R1b1b2a1b6b</b> (R1b1c7)	3,000 ybp	North-west Ireland and west Scotland	Scottish Irish
P66	<b>R1b1b2a1b6c</b> (R1b1c8)	2,500 ybp	?	?



**FamilyTreeDNA**  
Certificate – Y-DNA

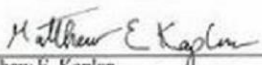
This Certificate confirms that you have had your DNA analyzed by Family Tree DNA. The outcome from each of the sixty-seven Loci examined is reported in the table below. For your benefit we have listed the Locus designation for all sixty-seven Loci utilized by the geneticists supporting our company. If your alleles for the sixty-seven Loci match another person exactly, then you share the same Haplotype. DNA testing is a genealogical tool designed to aid individuals wanting to "connect" to other relatives lost in time and where the paper trail no longer exists.

**Mr. Andrew Stephen Wilson**

Your sample # **199412**

DYS #	393	390	19/394	391	385a	385b	426	388	439	389-1	392	389-2	
Allele	13	25	14	11	11	13	12	12	12	13	14	29	
DYS #	458	459a	459b	455	454	447	437	448	440	464a	464b	464c	464d
Allele	17	9	10	11	11	25	15	18	30	15	15	16	18
DYS#	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDY a	CDY b	442	438	
Allele	11	11	19	23	16	16	18	17	36	39	12	12	
DYS #	531	578	395S1a	395S1b	500	537	641	472	408S1	511			
Allele	11	9	15	16	8	10	10	8	10	10			
DYS #	425	413a	413b	557	594	436	490	534	450	444	481	520	446
Allele	12	21	22	16	10	12	12	16	8	12	25	20	13
DYS#	617	568	487	572	640	492	565						
Allele	12	11	13	11	11	12	12						

April 7, 2011

  
 Matthew E. Kaplan

ANDREW WILSON - full yDNA67 profile. This is the direct O'Connor-Wilson paternal bloodline. (R1b1a2 Haplotype) My maternal (de Vaux- Strickland and my full Autosomal profile to follow soon.

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