

## Wuest – Deep Ancestry – Migration Routes

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Mary E. Wuest, author of *Spessart Roots*.

This is a summary of what DNA tells us about the history of my Wuest line: where the line stems from and how it got to Europe. For these studies, testing is done on the Y-chromosome of a DNA sample. The Y-chromosome remains basically intact over time, but there are occasional changes – mutations – many of which are permanent and get passed down from father to son, continuing down that particular male line. With the test results, analyzers are able to place individuals into different groups and subgroups, the members of which share the same historical set of mutations, and thus a common ancestor, even though that ancestor might be from tens of thousands of years back. For the Wuest line, my brother Nick donated the DNA sample.

Researchers continually analyze information from many different sources to get a handle on the ancient migratory routes and cultural histories of the different lines. Information they use includes: what is known about the locational histories of the people providing DNA samples: where they live now and where their known ancestors had lived; and archaeological finds, especially ancient skeletons, from which they can extract DNA. Where these skeletons are found and how old the skeletons are provide much information. Besides skeletons, ancient artifacts such as pottery that were known to belong to certain groups aid in tracing a people's migratory routes. Other factors, such as knowledge of historical trade routes and known ancient migrations, are also used in putting a story together.

My major source for this “report” is a recent article found at [http://www.eupedia.com/europe/Haplogroup\\_G2a\\_Y-DNA.shtml](http://www.eupedia.com/europe/Haplogroup_G2a_Y-DNA.shtml). I've analyzed and summarized the article as it pertains to my ancestral line. When I needed clarification, I did additional on-line research and also got help from one of the project administrators for the G-group DNA studies.

The major Y-chromosome DNA group that the Wuest line belongs to is group G. It has a relatively low frequency in the population, ranging between 1 and 10% in most of Europe going north from Italy, decreasing in percentage the farther north one goes. It is more common in the Caucasus region, central and southern Italy, and Sardinia, ranging from 15% to 30% of male lineages in these regions.

Group G descends from Group F. Group F is thought to represent the second major migration of Homo sapiens out of Africa, at least 60,000 years ago. While earlier migrations out of Africa followed the coasts of South Asia, eventually reaching the Far East, Group F people traversed the Arabian Peninsula and settled in the Middle East. Some migrated to the western part of the Middle East. About 48,500 years ago, a man in Group F had a mutation and started a new line, identified as Group G. This man lived in an area roughly encompassing the eastern part of

present-day Turkey and the northern parts of present-day Syria and Iraq. This area abutted and was part of the Fertile Crescent.

Around 26,000 years ago, a G man had a mutation which started the G2 line which we Wuests belong to. (Shortly before this, a G1 line had formed, many descendants of which eventually migrated east to present-day Iran and India.)

At that time, all humans would have been hunter-gatherers, usually living in small nomadic or semi-nomadic tribes. It is estimated that agriculture began to develop about 11,500 years ago. It started in the Fertile Crescent, with members of the G2 group appearing to have been major players in its development.

The Fertile Crescent was a natural place for farming to begin. The flood plains of the area were ideal for primitive farming as they did not require irrigation. Initial farming was of grains and legumes. At first, agriculture was too rudimentary to allow an independent subsistence. It took a long time to master domesticating plants with selective breeding, etc. Meanwhile, the people continued as hunter-gatherers, supplementing their diet with farming.

At some point, a G2 man had a mutation and started the G2a line, the line we belong to. About 9,000 years ago, the G2a branch started expanding and spreading westward to Anatolia (in modern Turkey), the Caucasus, and Europe. (There was also another subgroup, our “G2b cousins,” which expanded eastward to Pakistan. It is now found mostly among Lebanese and Jewish people.)

The first pottery in the Middle East appears about this time, seemingly in conjunction with the expansion of G2a agriculturalists toward the west, but while they were still in the Middle East. Pottery allowed easy storing of cereals and legumes and could also have facilitated trade with neighboring herders, herders of sheep and goats and cattle. The herders lived in the mountainous areas on the northern edge of the Fertile Crescent. Goats and sheep had first been domesticated some 11,000 years ago, but were not introduced to our G2a people until just after the appearance of pottery. The G2a people probably traded pottery for livestock.

G2a people continued their expansion westward to Europe. Testing of ancient skeletons confirms that our group G2a was the dominant lineage of farmers and herders who migrated from Anatolia to Europe between 9,000 and 6,000 years ago.

G2a people may have been among the first humans to have acquired the alleles for fair skin. An allele is basically a form of gene that has arisen by mutation. It is unclear exactly when and among which Y-chromosome group fair skin first arose, but it has been suggested that the new diet brought by cereal agriculture would have led to a natural selection process for fair skin.

Hunter-gatherers ate a diet relatively high in meat and fish, from which they would have absorbed vitamin D. People among the agriculturists lacked this means of getting Vitamin D.

Those who had mutations for light skin would have had better chance for survival since fair skin can more easily stimulate the production of vitamin D from sunlight. Recent testing of ancient skeletons in Europe ranging from 8,000 to 3,000 years old indicate that the farmers entering Europe (of which G2a people were prominent) during that time had the gene for fair skin.

There were different ways the G2a people spread from Anatolia to Europe. By 7,800 years ago, some crossed the Aegean Sea by boat and colonized the Italian peninsula, the Illyrian coast, southern France and Iberia. They had assimilated to some extent with people of other Y-chromosome groups, but ancient DNA shows that the vast majority (over 80%) were of our G2a group. Many of these other lineages are virtually extinct nowadays, while several others are now very rare in Europe.

Many of you probably remember reading about “Ötzi the Iceman” who lived about 5300 years ago, and whose body was found in the Italian Alps in 1991. Ötzi was a member of our G2a group.

Nowadays G2a is found mostly in mountainous regions of southern Europe. The hilly terrain of southern Europe indeed makes it ideally suited for herding goats, which G2a men brought with them during their westward expansion. But the most likely explanation is that mountains provided refuge for G2a tribes after the Proto-Indo-European speakers invaded Europe from the steppes of Russia and Ukraine during the Copper and Bronze Age ( about 5500 to 2600 years ago). The G2a people who were already in Europe were non-Indo-European, speaking a completely different set of languages.

The invading steppe people were primarily members of subgroups of the Y-chromosome group R1. (R1 is a common Y-chromosome group in Europe and Asia.) However, they had some G2a people among them. During the centuries, there had been more mutations among the G2a people, establishing new male lineages. One of these new subgroups was G2a-L140 (formed about 11,000 years ago), which we are members of. Many members of this subgroup had at some early point assimilated with the steppe people (R1 people).

This would have been at one of the different times when G2a-L140 people were in close proximity to the R1 subgroups in the steppes of Russia (the Caucasus) or in Ukraine. It could have been while the G2a-L140 subgroup was still in the Fertile Crescent, or during their expansion westward toward Europe. After assimilating with the R1 people of the steppes, the G2a-L140 people would have adopted the nomadic lifestyle of the steppe people.

Later, when R1 tribes from the steppes of Russia and Ukraine invaded Europe, the G2a-L140 people who had assimilated with them also took part in the invasion.

Supporting this is the fact that people from the G2a-L140 subgroup are found uniformly throughout Europe, even in Scandinavia and Russia, whereas most G2a people are found mostly in mountainous areas. In other words, many G2a-L140 people didn't have to go into hiding like other G2a people because they were among the invaders.

Were the ancestors of our Wuest line among the invaders from Russia and Ukraine? Probably.

The assimilation of G2a-L140 people with the R-1 people of the steppes is estimated to have been between 9,000 and 6500 years ago. We need to look at further subgroups of G2a-L140, subgroups formed by mutations that would have taken place after the assimilation and while in Russia.

There's a series of further subgroups descended from G2a-L140 that we are members of. One of these subgroups is G2a-L1264, which formed about 7900 years ago. It is found mostly in Russia, in the northwest Caucasus. It is also found in Baltic, Slavic and Germanic countries, as well as in Central Asia and India. These are locations where evidence shows that descendants of the R1 invaders from the steppes dispersed to. These are good indicators that the G2a-L1264 mutation took place in Russia and that G2a-L1264 descendants accompanied the R-1 invaders.

There is a further subgroup descended from G2a-L1264, which we are members of. It's G2a-L654.2 and it formed about 4,200 years ago. This mutation for sure must have occurred in Russia since this was long after the assimilation with the Russian R-1 people. As of yet, only two men have been found to be members of this subgroup: my brother Nick and a Russian man.

There are probably many others who belong to this G2a-L654.2 subgroup, but they are not yet known. Most likely, some are already known G-group members, but have not been tested for the particular L654.2 mutation, which has only recently been discovered.

And that is how our Wuest line got from Africa to Europe.