Genetic History

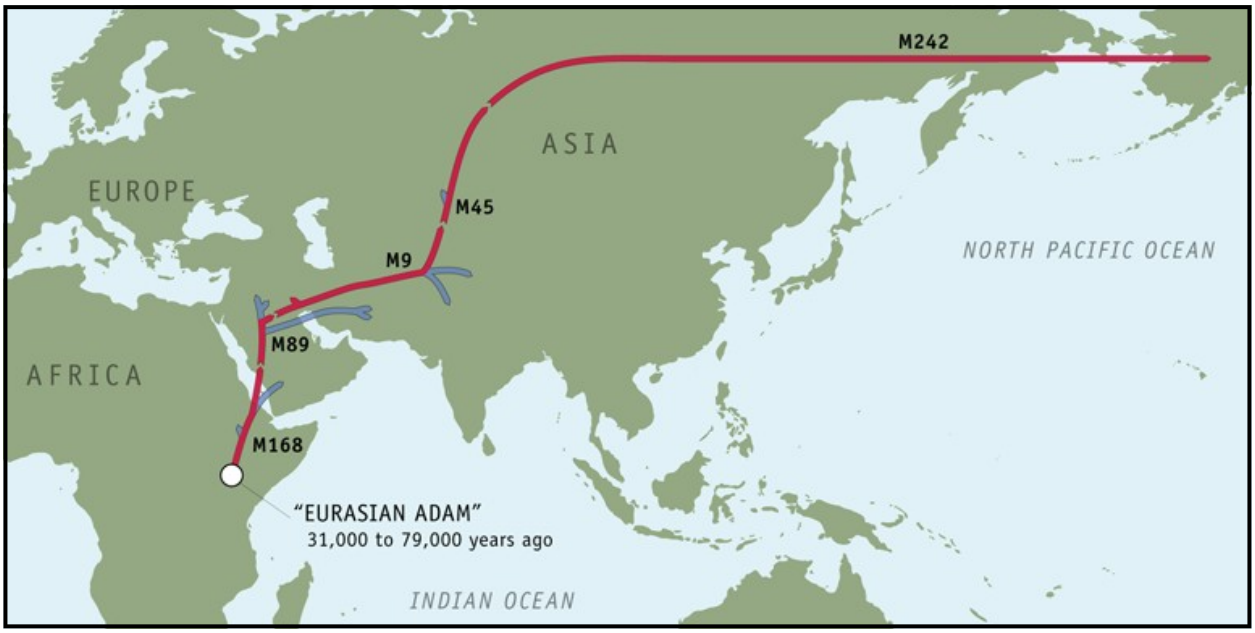
Unchanged, that is unless a mutation—a random, naturally occurring, usually harmless change—occurs. The mutation, known as a marker, acts as a beacon; it can be mapped through generations because it will be passed down from the man in whom it occurred to his sons, their sons, and every male in his family for thousands of years.

In some instances there may be more than one mutational event that defines a particular branch on the tree. This is the case for my haplogroup Q, since this branch can be defined by two markers, either *M242* or *P36*. What this means is that either of these markers can be used to determine my particular haplogroup, since every individual who has one of these markers also has the other. Therefore, either marker can be used as a genetic signpost leading us back to the origin of my group, guiding our understanding of what was happening at that early time.

When geneticists identify such a marker, they try to figure out when it first occurred, and in which geographic region of the world. Each marker is essentially the beginning of a new lineage on the family tree of the human race. Tracking the lineages provides a picture of how small tribes of modern humans in Africa tens of thousands of years ago diversified and spread to populate the world.

A haplogroup is defined by a series of markers that are shared by other men who carry the same random mutations. The markers trace the path my ancestors took as they moved out of Africa. It's difficult to know how many men worldwide belong to any particular haplogroup, or even how many haplogroups there are, because scientists simply don't have enough data yet.

One of the goals of the five-year Genographic Project is to build a large enough database of anthropological genetic data to answer some of these questions. To achieve this, project team members are traveling to all corners of the world to collect more than 100,000 DNA samples from indigenous populations. In addition, the Genographic Project encourages us to contribute our anonymous results to the project database, helping our geneticists reveal more of the answers to our ancient past.



My Ancestral Journey: What We Know Now