

*K*, is known as the Eurasian Clan.

This large lineage dispersed gradually. Seasoned hunters followed the herds ever eastward, along a vast belt of Eurasian steppe, until the massive mountain ranges of south central Asia blocked their path.

The Hindu Kush, Tian Shan, and Himalaya, even more formidable during the era's ice age, divided eastward migrations. These migrations through the "Pamir Knot" region would subsequently become defined by additional genetic markers.

The marker *M45* first appeared about 35,000 to 40,000 years ago in a man who became the common ancestor of most Europeans and nearly all Native Americans. This unique individual was part of the *M9* lineage, which was moving to the north of the mountainous Hindu Kush and onto the game-rich steppes of Kazakhstan, Uzbekistan, and southern Siberia.

The *M45* lineage survived on these northern steppes even in the frigid Ice Age climate. While big game was plentiful, these resourceful hunters had to adapt their behavior to an increasingly hostile environment. They erected animal skin shelters and sewed weathertight clothing. They also refined the flint heads on their weapons to compensate for the scarcity of obsidian and other materials.

The intelligence that allowed this lineage to adapt and thrive in harsh conditions was critical to human survival in a region where no other hominids are known to have survived.

Members of haplogroup *R* are descendents of Europe's first large-scale human settlers. The lineage is defined by Y chromosome marker *M173*, which shows a westward journey of *M45*-carrying Central Asian steppe hunters.

The descendents of *M173* arrived in Europe around 35,000 years ago and immediately began to make their own dramatic mark on the continent. Famous cave paintings, like those of Lascaux and Chauvet, signal the sudden arrival of humans with artistic skill. There are no artistic precedents or precursors to their appearance.

Soon after this lineage's arrival in Europe, the era of the Neandertals came to a close. Genetic evidence proves that these hominids were not human ancestors but an evolutionary dead end. Smarter, more resourceful human descendents of *M173* likely outcompeted Neandertals for scarce Ice Age resources and thus heralded their demise.

The long journey of this lineage was further shaped by the preponderance of ice at this time. Humans were forced to southern refuges in Spain, Italy, and the Balkans. Years later, as the ice retreated, they moved north out of these isolated refuges and left an enduring, concentrated trail of the *M173* marker in their wake.

Today, for example, the marker's frequency remains very high in northern France and the British Isles—where it was carried by *M173* descendents who had weathered the Ice Age in Spain.

Members of haplogroup *R1b*, defined by *M343* are the direct descendents of Europe's first modern humans—known as the Cro-Magnon people.

Cro-Magnons arrived in Europe some 35,000 years ago, during a time when Neandertals still lived in the region. *M343*-carrying peoples made woven clothing and constructed huts to withstand the frigid climes of the Upper Paleolithic era. They used relatively advanced tools of stone, bone, and ivory. Jewelry, carvings, and intricate, colorful cave paintings bear witness to the Cro Magnons' surprisingly advanced culture during the last glacial age.