Scientists Discover Mysterious Human Lineage with No Descendants

Story by Melissa Ait Lounis

Around 45,000 years ago, something unusual occurred in Ice Age Europe. A wave of modern humans, having migrated from the southeast, arrived in a continent already populated by Neanderthals. These early humans, who shared many physical traits with us, coexisted with Neanderthals for about 5,000 years. This interaction left behind a genetic legacy that can still be seen in our DNA today**. About 2-3% of the genes** in non-African populations can be traced back to these early encounters. But until now, much remained unknown about these first modern humans who ventured into Europe.

A Discovery In Ancient Bones

In the **German Ranis cave**, scientists uncovered a collection of delicate bones belonging to at least **six individuals**. Dating back between 42,000 and 49,000 years, these remains came from a diverse group, including men, women, and infants. Among them were a mother and her daughter. The discovery posed an initial mystery when another skull was found in the Czech Republic at Zlatý Kůň, believed to be from a woman who lived around the same time.

At first, there was no clear link between the two sites, but genetic testing revealed an intriguing connection. The woman from Czechia and two individuals from Ranis were found to be fifth- or sixth-degree relatives, suggesting that they were part of a larger, extended community.

Linking Humans With Neanderthals

The Ranis cave is famous for the discovery of a distinctive style of tools called **LRJ tools**, or **Lincombian-Ranisian-Jerzmanowician**. Archaeologists had long debated whether these tools were crafted by Neanderthals or early modern humans. Now, it's clear that these finely made stone tools were shaped by

modern humans. This connection extends beyond the Ranis site. The woman from Zlatý Kůň, despite having no tools associated with her skull, was genetically linked to the Ranis group.

This discovery has also provided groundbreaking insights into the human genome. The research team from the Max Planck Institute for Evolutionary Anthropology successfully sequenced the oldest high-quality human genomes ever recovered. One specimen from Ranis, nicknamed **Ranis13**, had DNA so well-preserved that scientists could reconstruct his entire genome with remarkable detail.

A Vanished Lineage

While the discovery of these ancient humans is significant, it also raises questions about their genetic legacy. Unlike many other ancient human groups in Europe and Asia, the Ranis and Zlatý Kůň individuals showed **no signs of recent interbreeding with Neanderthals**. Their Neanderthal DNA seemed to trace back to the same ancient encounter that all non-African humans share. However, this particular group didn't seem to have interacted much with Neanderthals during their stay in Europe.

What's even more puzzling is that these individuals did not leave any descendants. Their genetic line appears to have disappeared entirely. This suggests that, despite their pivotal role in early human migration, they didn't leave a lasting impact on the genetic pool.

A Small And Fragile Population

Estimations based on shared DNA suggest that this early human group was likely very small, comprising only a few hundred individuals spread over a vast area. Life for these early humans was undoubtedly challenging. They lived on the edge of Ice Age Europe, facing not only harsh winters but also competition from Neanderthals, who had been in the region for much longer and were already well-adapted to the cold.

Despite their small numbers and the harsh environment, these early humans were among the first to leave Africa and step onto the frozen frontier of Europe. They did not survive for long, but their brief presence still tells an important story about the movement of human populations and the complexities of survival in a new and unforgiving land.

Though the Ranis and Zlatý Kůň people did not survive to become our direct ancestors, their DNA lives on in the broader human story. They were part of the larger human migration out of Africa and into Europe, a journey that would eventually lead to the rise of civilizations, technological advancements, and the exploration of space.