

America's only Clovis skeleton genome offers clues to Native American ancestry (Update)

February 12 2014, by Mariette Le Roux



A large (approx. 255mm x 122mm) tabular core/ late-interval biface made of brown chert along with the beveled end of an osseous rod. Credit: Sarah L. Anzick

Nearly 13,000 years ago, a baby boy died in what is Montana today.

Mourners stained his tiny body with red ochre and entombed him with artefacts that had likely been in his family for generations.

After lying undisturbed for millennia, the infant's body was dug up by accident at a construction site in 1968—the oldest skeleton ever found in the Americas.

Now, scientists say the remains have helped them settle a long-standing debate about the lineage of indigenous Americans, and shed light on the settlement of the last continent to be populated by modern humans.

After decoding the child's genome, an international team of experts said they can confirm that modern Native Americans are direct descendents of the first people to have settled the continent from Asia some 15,000 years ago, and not migrants from Europe.

"The genetic data... confirms that the ancestors of this boy originated from Asia," said Michael Waters of the Texas-based Center for the Study of the First Americans, who co-authored the report in the journal *Nature*.

The child's family, in turn, were "directly ancestral to present-day Native Americans".

The boy had been a member of the so-called Clovis culture which lived in North America between 13,000 and 12,600 years ago and is known for its distinctive hand axes, blades and bone and ivory tools.

There has long been a dispute as to where the group's ancestors came from.

Some believed Clovis forefathers came from east Asia, crossing the Bering Strait, which about 15,000 years ago formed an ice bridge.

Others claimed to have found evidence that Native Americans derived from a cross-Atlantic migration of southwestern Europeans during the Last Glacial Maximum some 21,000 to 17,000 years ago, when vast ice sheets covered much of North America, northern Europe and Asia.

Astonishing

Genetic analysis showed the boy, who was 12-18 months old when he died about 12,600 years ago, was more similar to Siberians than other Eurasians or any other people in the world, the scientists reported.

"The study does not support the idea that the first Americans originated from Europe," said Waters.

"A single migration of humans introduced the majority of the founding population of the Americas south of the ice sheet at the close of the last Ice Age."

According to co-author Eske Willerslev of the Natural History Museum of Denmark, the child's family was "directly ancestral to so many peoples in the Americas.



A nearly complete projectile point of dendritic chert, a mid-interval biface of translucent cryptocrystalline quartz, a mid to late-interval biface of dendritic chert, and a "dual, end-beveled" osseous rod, all of which exhibit various amounts of red ochre residue. Credit: Sarah L. Anzick

"It is astonishing. We don't have of course genetic information from all tribes, but you could say that just a very, very rough estimate would be about 80 percent deriving from that group. It's almost like a missing link."

Examination of the remains have also yielded new insight into the cultural practices of the first inhabitants of the Americas.

The child's remains had been found buried under 125 artefacts that included spear points and tools made of elk antler.

The skeleton as well as the relics, which were dated to about 13,000 years ago, had been covered in powdered ochre, a type of mineral.

"The difference in age between the skeleton and the... tools as well as the fact that this (elk) was a rare animal, suggest that the artefacts were very special ritual objects or heirlooms passed down over generations," said Waters.

Researchers on the team said they were eager to build closer ties with Native American groups in their future scientific pursuits.

"We want to bring American Indians to the table with this research so they can help guide the most respectful and appropriate way to do this kind of research," said Shane Doyle of Montana State University.

The child's remains are to be reburied later this year.

More information: Paper: [dx.doi.org/10.1038/nature13025](https://doi.org/10.1038/nature13025)

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