

DNA Updates of Interest

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Heritage of Native Americans

The most interesting thing about DNA studies is how they are always changing our perceptions of who we are as more data comes to light. Case in point: the deep history of Native Americans. For decades there has been agreement among most scientists that East Asians came over the land bridge between Asia and North America and became the ancestors of all Native Americans. However, recent studies show it wasn't that simple.

A recent article in *Nature*¹ reports on ancient DNA taken from the skeleton of a four-year-old boy buried in Siberia 24,000 years ago. Using his complete nuclear genome, he was found to be closely related to Native Americans even though his ancestors were from Europe or West Asia. Most significantly, a portion of his genome is shared only with Native Americans and no others. Scientists deduced that about one-third of all Native Americans are not purely East Asian but are instead ultimately from "western Eurasia," while the remaining two-thirds are indeed from eastern Asia only.

This is particularly elucidating to those who have puzzled over the presence of certain haplogroups among Native Americans which should not be present in unmixed populations since they connote European ancestry. These include Y-chromosome Haplogroup R, the boy's haplogroup, and his mtDNA Haplogroup U.

Since nearly all Native Americans from North and South America are equally related to this boy, they must share very deep roots. The sequence suggested is that some time prior to 24,000 years ago, the ancestors of present-day Native Americans and present-day East Asians split. The boy's group moved into Siberia from the west. Sometime later, his group mixed with East Asians. It was this mixed population that spread into North America.²

This also helps to explain other puzzles, such as why the facial features of 9,000 + year-old Kennewick Man from my state (Washington) look somewhat European³ and indeed why some Native Americans look more European than others even though they have had no historic mixture with Europeans.

Heritage of Catherine Pillard

On to a related topic – Who was Catherine Pillard? You may recall the ongoing debate in this journal and elsewhere about an ancestor of many of us, Catherine Pillard, the wife of Pierre Charron.⁴ In brief, genealogical records list Catherine as a *Fille du Roi* from La Rochelle in France, but the mtDNA of her matrilineal descendants tested as Haplogroup A or A* (with the asterisk signifying an ancient branch of Haplogroup A), which was thought to be exclusively Native American or Asian. In an attempt to reconcile these contradictions, studies continued on both the records and the DNA.

¹ Maanasa Raghavan, *et al*, "Upper Palaeolithic Siberian Genome Reveals Dual Ancestry of Native Americans," *Nature* 505: 87-91.

² Michael Balter (2013), "Ancient DNA Links Native Americans with Europe," *Science* 342: 409-410. Cites Eske Willerslev speaking at Paleoamerican Odyssey meeting, Santa Fe, 16-20 October 2013.

³ James Chatters, *Ancient Encounters: Kennewick Man and the First Americans* (New York: Simon & Schuster, 2001).

⁴ Raymond F. Lussier, Thomas King-McMahon, Johan Robitaille, "Catherine Pillard A King's Daughter, of Algonquin-Siberian origin, born in France about 1651 ... What is wrong with this picture?" *Michigan's Habitant Heritage (MHH)*, April 2008, Vol. 29, #2, 53-65.

Subjected to intense scrutiny, the records did not resolve the issue.⁵ Variants confused her identity. Was her name “Pillard,” “Plat,” “Pilliat,” or one of the six other similar surnames found in documents. Just who was her mother? The records showed no clear family name for her mother and Catherine’s birth did not seem to be recorded in La Rochelle, France. And why was there no record of Catherine’s voyage to New France? Other records suggested she may actually have been Senta *dite* Catherine Du Plat, baptized in New France as an infant in 1651, the daughter of Atsena *dit* La Plat, Huron chief of the Bear Nation. Perhaps “La Rochelle” referred to the name the Recollets gave to a certain Huron village. These and other “coincidences” supported the theory that the records were misleading and she was born a Huron, not a Frenchwoman.

What then of the mtDNA evidence? Is it true that if her mtDNA were Haplogroup A*, then the genealogical records must be wrong and she must have been Native American since Europeans are never A*? Much more has been learned since 2009 about the nature of Catherine’s rare haplogroup. This is particularly thanks to the efforts of Dr. Jacques Beaugrand, professor emeritus of the University of Québec at Montréal, president of French Heritage DNA, and director of the Catherine Pillard project for the Pierre Charron Family Association.

Dr. Beaugrand has explained in his blog⁶ and in e-mails to me that further studies have enabled a more refined analysis of Catherine’s haplogroup. Rather than A*, she has been found to belong to Haplogroup A10, and **Haplogroup A10 has never been found in prehistoric New World Native American populations. Haplogroup A2 variants (such as A2f, A2q, etc.), which are also found in Siberia, are the only variants of Haplogroup A that have been found in the prehistoric New World.**⁷

According to Dr. Beaugrand, (other than in matrilineal descendants of Catherine Pillard) Haplogroup A10 has been found in Old World populations only, specifically on the Tibetan plateau and in the province of Taymyr in Western Siberia and Volga-Ural in Russia.⁸ Haplogroups A10 and A2 are descendants of A4, who split off from A*, their ancient ancestress who lived about 50,000 years ago in Siberia. Subclades of A2 developed in Beringia prior to migrating into North America. The 13 or 14 mutations that separated A2 from A10 suggest that they parted company about 20,000 years ago.

How did Catherine’s ancestress get to La Rochelle from Eurasia? We’ll never know for sure, but Dr. Beaugrand speculates she may have been part of populations north of the Caspian Sea and Black Sea in the Pontic Steppe known to have been swept west; for example, the Tatars who invaded Europe bringing women with them.⁹

Is this the final word? As is true for the genome of the Siberian boy (above), this explanation for Catherine Pillard’s mtDNA fits the data to date, but the exciting world of DNA studies is constantly evolving, and it is likely more will be learned about the origins of these elusive ancestors in the future.

⁵ Suzette Leclair, Gail Moreau-DesHarnais, Johan Robitaille, “Catherine Pillard, Native of La Rochelle: In Search of the Truth,” *MHH*, April 2009, #2, 53-64.

⁶ <http://www.forum-adn.org> Message par [message by] beaugrandjacques>>Dim(anche) Dec 01, 2013 12:07 a.m. “To our anglosaxon friends concerning Catherine Pillard” and <http://miroise.org/Forum-ADN/viewforum.php?f=44>

⁷ Dr. Beaugrand explained in an e-mail that a sample, which is identified solely as Haplogroup A with no subclade, has not yet had its coding region examined for specific mutations that would classify it into a subclade of A2. As for A*, that ancient haplogroup has only been found for one person so far, a Chinese woman.

⁸ B. Malyarchuk, M. Derenko, G. Denisova, O. Kravtsova (2010), “Notogenomic Diversity in Tatars from the Volga-Ural region of Russia,” *MOL.BIOL.EVOL.* 27 (10): 2220-2226.

⁹ <http://fr.wikipedia.org/wiki/Tatars>