New genetic evidence that Prince William, Duke of Cambridge, is the direct descendant of an Indian woman and that he carries her mitochondrial DNA.

Through a mixture of traditional genealogy and cutting-edge science, genetic ancestry testing company, BritainsDNA, can reveal new evidence that Prince William's maternal line traces back just eight generations to Eliza Kewark, an Indian woman. She lived in India during the period when it was governed by the East India Company.

Background

Britain today is becoming a melting pot, with over six million descendants of immigrants from the Commonwealth and other parts of the world, and over one million self-identified mixed race individuals in the 2011 census. However, the degree of mixing in the "indigenous" population is less clear.

Mitochondrial DNA or mtDNA is a small piece of DNA, inherited mostly unchanged from a mother to her children. Men inherit it but do not pass it on. There are over 100 different groups of related mtDNA types that are found across the world, and many are found only in one part of the world, for example among Native Americans or Africans. It can be a very useful marker of ancestry.

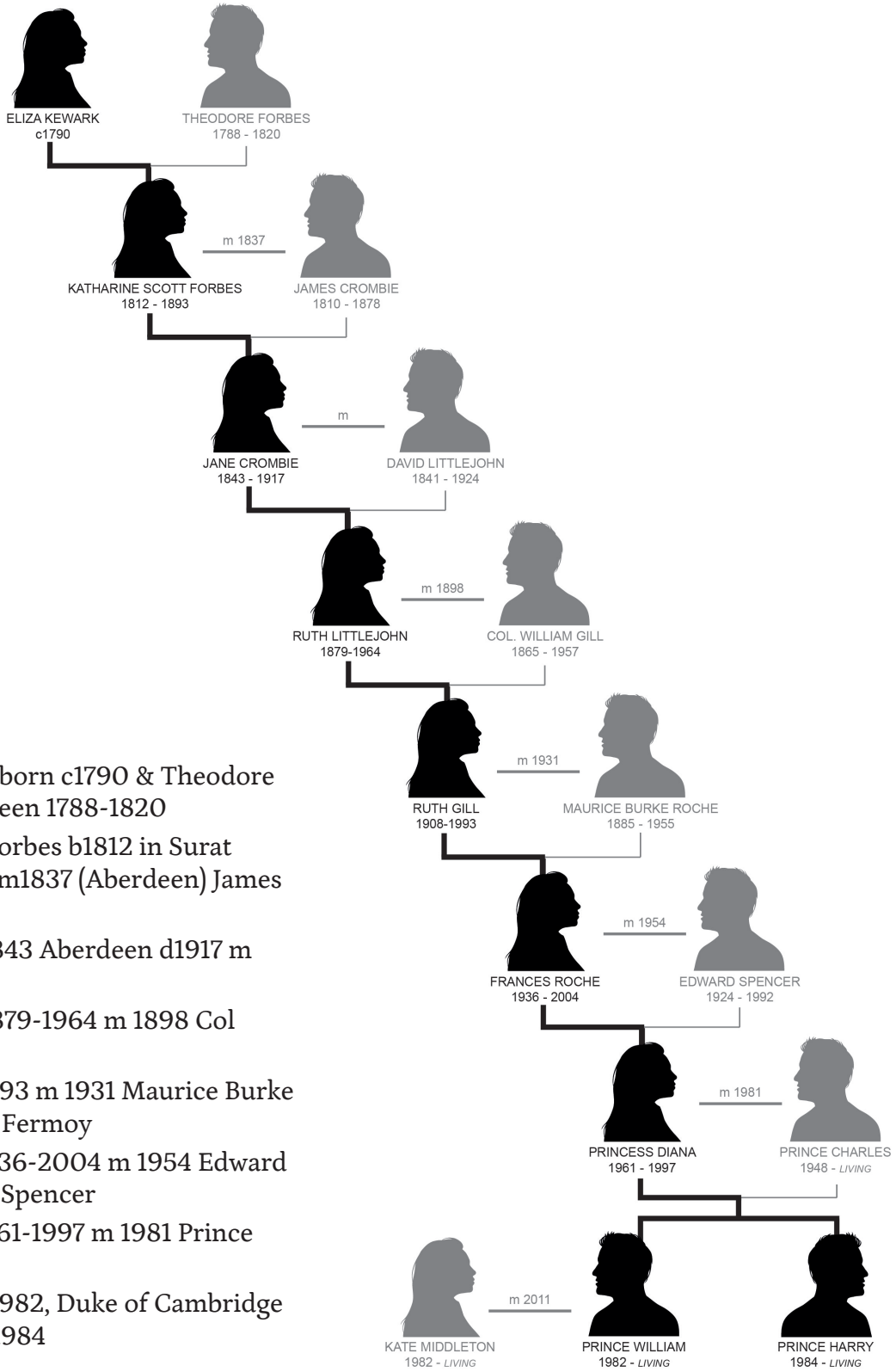
The Genealogical Research

The matrilineal genealogy of Prince William, Duke of Cambridge, traces back to an Indian woman known as Eliza Kewark.

She was housekeeper to his 5th great grandfather Theodore Forbes (1788-1820), a Scottish merchant who worked for the East India Company in Surat, a busy port north of Bombay.

The next page shows a detailed line of descent that shows how Eliza's mtDNA was passed on by her daughters and granddaughters directly in an unbroken line to Princess Diana and on to Prince William and Prince Harry.

Eliza is claimed to have been Armenian, possibly because her surname is rather like the Armenian name Kevork. And letters from Eliza to Theodore have been found which contain Armenian script. This in turn suggests a degree of Armenian cultural heritage and the possibility that her father may have been of Armenian descent. But we believe that all the evidence we have gathered shows that her genetic heritage through her motherline is Indian.



1. Eliza Kewark was born c1790 & Theodore Forbes lived between 1788-1820
2. Katharine Scott Forbes b1812 in Surat d1893 Aberdeen, m1837 (Aberdeen) James Crombie
3. Jane Crombie b1843 Aberdeen d1917 m David Littlejohn
4. Ruth Littlejohn 1879-1964 m 1898 Col William Gill
5. Ruth Gill 1908-1993 m 1931 Maurice Burke Roche, 4th Baron Fermoy
6. Frances Roche 1936-2004 m 1954 Edward Spencer, 8th Earl Spencer
7. Diana Spencer 1961-1997 m 1981 Prince Charles
8. Prince William b1982, Duke of Cambridge & Prince Harry b1984

New Genetic Evidence

Because mtDNA is passed down the female line, Prince William carries Eliza Kewark's mtDNA and so do all other matrilineal or motherline descendants of Eliza. Through genealogy we traced two such living direct descendants and by reading the sequence of their mtDNA, we showed not only that they matched, but also that it belongs to a haplogroup called R30b, thus determining Eliza Kewark's haplogroup. Comparison to databases totalling over 65,000 individuals from around the world show that only 14 examples have been reported, 13 of whom were Indian and one Nepalese. Moreover the other related branches of R30a and R30* are also entirely South Asian.

This confirms therefore that the mtDNA of Eliza Kewark of Surat was of Indian heritage.

R30b is rare even in India, where roughly 0.3% of people carry this lineage. And Eliza's lineage is rarer still. Within haplogroup R30b, an exact match to her sequence has yet to be found.

Princes William and Harry carry Eliza Kewark's markers but will not pass this Indian mtDNA onto their children, as mtDNA is only passed from mother to child.

A Genetic Legacy

We used another type of genetic evidence to corroborate the findings above. By reading over 700,000 autosomal markers scattered across the genomes of Princess Diana's two matrilineal cousins, and comparing them to a global database of samples, it is possible to estimate the proportions of continental-level ancestry for an individual. For instance someone with a father from Ireland and a mother from Nigeria would be 50% sub-Saharan African and 50% European, someone with three English grandparents and one from China would be approximately 20-30% East Asian. The proportion inherited from ancestors longer ago is lower and is also variable. Eliza Kewark's two descendants are estimated to be about 0.3% and 0.8% South Asian, with three blocks of South Asian DNA in each of their genomes. All the rest is of European origin.

These inherited autosomal markers equate to about 20-50 million letters of DNA out of 6 billion in total.

It is therefore very likely that Prince William has not only inherited a small proportion of Indian DNA from Eliza Kewark but his heirs will also carry it.

These fascinating links between DNA, genealogy and history have been made by Dr. Jim Wilson, Chief Scientist at BritainsDNA. He said:

"This is a great example of how genetics can be used to answer specific historical questions and uncover fascinating facts about our ancestry."

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Notes to the Editor

Launched in April 2012, BritainsDNA immediately set out to innovate. By combining historical analysis with the genetic information that can be gleaned from testing for ancestral DNA, we aimed to achieve a new understanding of Britain's history – a people's history.

A commercial company closely involved in scientific research, BritainsDNA offers a unique package of information featuring thorough historical analyses of results currently unmatched by any other European DNA ancestry testing company.

BritainsDNA recently launched Chromo2, the world's most advanced genetic ancestry test. Driven by the world-leading technology of Illumina, Chromo2 brings new dimensions to ancestry testing, delivering significantly more detail than any other test for your motherline, fatherline or overall ancestry.

Fact Sheet

What is DNA?

DNA (Deoxyribonucleic acid) is the complex chemical in which the instructions to build and run our bodies are written – this genetic code is the 'blueprint' for life. Each of us inherits around six billion letters of DNA from our parents, three billion from each. Made up of four biochemicals – adenine, cytosine, guanine and thymine – the genetic code is read like long strings of letters, sequences of A, C, G and T.

Learn more about DNA

What is a marker?

In reproduction, occasionally tiny errors of copying are made, for instance a T is added instead of an A, and these are called markers, or SNPs (single nucleotide polymorphisms). They arise in particular places at particular times and skilled geneticists can locate a marker's origin and date its creation. By looking at its frequency and diversity in modern populations, they can also track the movement of a marker across the face of the Earth.

Learn more about markers

What is a haplogroup?

A haplogroup is a group of related ancestral lineages and are defined by SNP markers. There are many different haplogroups in each population, some are specific to a certain part of the world, while others are more widespread but are more common in some areas and more rare in others.

Learn more about haplogroups

What is autosomal DNA?

Autosomal DNA makes up the majority of our DNA – twenty-two out of twenty-three chromosomes are pairs are autosomes. We inherit exactly 50% of our autosomal DNA for each parent, but not exactly 25% from each grandparent, because of the chance involved in determining which copy of each piece of DNA is inherited at each generation. An autosomal DNA test can reveal recent ancestral mix – showing the percentage of autosomal DNA that has come form different continents.

Learn more about autosomal DNA