

Love You, K2a2a, Whoever You Are

By AMY HARMON

THERE are a lot of things I may never know about K2a2a, one of four founding mothers of a large chunk of today's Ashkenazi Jewish population and the one from whom - I learned last week - I am directly descended.



I may never know whether she lived 1,000 years ago or 3,000. I may never know if she was born in the Judea, as the scientists who identified her through mitochondrial DNA say they suspect. I will certainly never know her name.

I do know that I carry her distinctive genetic signature. My mother carried it, my mother's mother carried it, my daughter now carries it, too.

And the thrill of that knowledge - for the price of the \$100 cheek swab test of my own DNA - may be all I can handle.

The popular embrace of DNA genealogy speaks to the rising power of genetics to shape our sense of self. By conjuring a biologically based history, the tests forge a visceral connection to our ancestors that seems to allow us to transcend our own lives.

But will our genetic identity undermine our cultural identity? The tests can add depth to what we have long believed, but they can also challenge our conception of who we are. The trauma some experience when their tests conflict with what they have always believed to be true has prompted some researchers to call for counseling to accompany the results.

Just how informative the tests are is also a matter of considerable debate.

Because the Y chromosome, which determines maleness, is passed unchanged from father to son, scientists can use it to determine whether two men share a common ancestor. When rare mutations do occur, they are unique to a single man and his male descendants, and scientists can often pinpoint when and where this founding father lived.

Mitochondrial DNA, which is passed on largely intact from mothers to their children, can be used similarly to trace maternal ancestry.

But each test can trace only one lineage back to a single ancestor. K2a2a was my mother's mother's mother's ... mother, for instance, and my father has taken the test so we can learn about his father's father's father's ... father.

But these kinds of tests can't teach me anything about any of the thousands of other ancestors of mine who were living 1,000 or 2,000 years ago.

the Huns, who invaded an area of Germany where he still has living relatives - an area, he wrote in an e-mail message, "known as the HUNSruck."

"I spend time now visualizing what their lives may have been like, moving and attacking and conquering," he said with obvious relish. "All these groups were trying to kill the other one off. They were just brutal."

The adoption of new ancestral identities does not come so easy to everyone.

Given her previous research, Lisa B. Lee, a black systems administrator in Oakland, Calif., was sure she would find a link to Africa when she submitted her father's DNA for testing. Family lore had it that his people were from Madagascar. But after tests at three companies, the results stubbornly reported that he shared genetic ancestry with Native Americans, Chinese and Sardinians. No Africa.

"What does this mean; who am I then?" said Ms. Lee, who was active in the Black Power movement of the 1960's. "For me to have a whole half of my identity to come back and say, 'Sorry, no African here.' It doesn't even matter what the other half says. It just negates it all."

"Am I Sardinian?" she said. "Am I Chinese? Well that doesn't mean anything to me. It doesn't fit, it doesn't feel right."

DNA skeptics worry that there is a threatening side to the rise of DNA genealogy. Historically, associating human difference with genetic characteristics has had disastrous social consequences. These tests, marketed as tools to connect to a familial past, DNA skeptics say, often rely on the ability to differentiate people by the parts of our genetic makeup that correlate with racial identity.

DNAPrint Genomics in Sarasota, Fla., for instance, produces reports stating that an individual is, say, 15 percent Native American, 50 percent Western European, 10 percent African, 5 percent South Asian and 20 percent Middle Eastern.

Sandra Soo-Jin Lee, senior research scholar at the Stanford Center for Biomedical Ethics, said that history teaches the dangers of trying to define racial groups with science. "B,wer'e igong Tj ET C