

THE BODY'S EVIDENCE

With ancient beliefs at stake, some Aboriginals reject DNA testing

BY ALEXANDRA SHIMO • The history of our ancestors is presently being rewritten by an articulate, blond, American geneticist named Spencer Wells. For the past three years, Wells and his team have travelled the earth, and to date they have sampled the saliva and tissue of 11,000 Canadians and approximately 250,000 others in the world's largest anthropological study. The problem is that not everyone agrees with the testing or the results.

Sponsored by *National Geographic*, where Wells is an explorer-in-residence, and IBM, the study, known as the Genographic Project, is examining how and when early man emerged from Africa, when he settled in Europe and Asia, and other genealogy questions, such as which ethnic groups have Jewish ancestry and whether *Homo sapiens* mated with other extinct hominid groups. His



TESTING: Spencer Wells, right, explains how to collect a DNA sample with a swab

research is also looking at whether Europeans settled in the New World long before the days of Christopher Columbus. There is a theory that there was a separate, earlier migration to North America from Europe about 13,000 to 18,000 years ago across the Atlantic, which would mean Europeans may have settled in Canada long before Jacques Cartier ever caught sight of the St. Lawrence.

These investigations don't sit easy with many Aboriginal groups. Some elders are urging others not to participate in the study. "Canada should settle land rights first before anyone does this sort of research," says Arthur Manuel, a member of B.C.'s Neskonalith Indian Band and spokesman for the Indigenous Network on Economies and Trade, who has been encouraging First Nations persons not

to participate. "When you hear about this stuff, you know you are going to run into garbage from rednecks like, 'Oh, you guys weren't here first.'"

In this age of genealogy, there is much interest in finding out where we came from. The crux is that this history of early man is dependent on having indigenous persons co-operate, says Wells. Many have remained more isolated than urban populations, and their DNA is more likely to provide vital clues about the history of mankind.

When humans procreate, genes are passed down to their offspring from mother and father. Wells and his team

look for specific mutations: unique markers in an individual's DNA. If a mutation from thousands of years ago tracks back to a particular geographic region, then those genetic markers can be used to trace the routes early people travelled to reach the four corners of the earth. So far, the DNA evidence suggests the first humans left Africa between 50,000 and 60,000 years ago. One branch travelled up through the Middle East, along the coast of India, and reached Australia. Another branch settled in the Middle East, and then went to Europe and Asia.

From there, the dominant theory is that a major migration to North America took place between 15,000 to 20,000 years ago across the Bering Strait. (There is also linguistic and genetic evidence that there was a later migration to Canada up the West Coast of the Americas 6,000 to 10,000 years ago.) If proven, a migration from Europe between 13,000 to 18,000 years ago might mean Europeans settled in North America before the later migrations of natives—or perhaps even concurrently

with the earlier migration. "This has significant implications for how we conceive of native American ancestry and how native Americans see themselves," says Theodore Schurr, the Genographic Project's North American director, and professor of anthropology at the University of Pennsylvania. "If you say things like 'White people came here first,' it is actually quite problematic."

Studies like these can have implications for native land claims, and also for traditional

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stories about elders and their origins. For example, in the Cree creation story, says Ron Lameman, a member of Beaver Lake Cree Nation and executive director of the Confederacy of Treaty Six First Nations, "There was a creator who created each plant and animal specimen individually, and human beings last." Any tests that probe these theories are unwelcome, Lameman adds. "We don't agree with tracing the DNA story. We don't agree with evolution or with playing God."

Schurr has the monumental task of collecting data from indigenous persons like Lameman. He acknowledges there may be disagreement between the scientific data and

traditional stories. However, Schurr doesn't think the genetic evidence will support the theory that Europeans arrived before the later migrations of natives since the preliminary DNA evidence suggests Europeans and natives are descended from different genotypes. "A big part of what we are doing is trying to answer people's fears and overcome the levels of mistrust," he says.

To do that, the study is investing in programs to preserve traditional cultures and language. The general public is also encouraged to participate through the purchase of DNA kits. So far about 11,000 non-native

Canadians have bought a kit for \$95. Inside is a video, vials and swab sticks to gather cells from the mouth. About six to eight weeks after sending in the sample, participants find out what migratory routes their ancestors took. Half the proceeds from the sale of the kits are plowed back into Aboriginal cultural and educational projects.

Earlier attempts to undertake similar studies—such as the Human Genome Diversity Project in the 1990s—had to be cut back because of protests by native groups. Some were also worried that indigenous persons would not financially profit from any medical discoveries made from the sampling of their DNA. (The Genographic Project says it will not use the data to analyze disease history or map genetic illnesses, although this fear still surfaces in conversation with indigenous persons.) Many in the scientific community hope the Genographic Project doesn't suffer the same fate as earlier studies. "It would be a tremendous loss for humanity," says Mark Stoneking, a professor at the Max Planck Institute in Leipzig, Germany. As indigenous groups intermarry and disperse at an ever-accelerating pace, scientists believe the chance to capture human history is fast disappearing. "Everyone else has given up," Stoneking adds. "If they get even a fraction of what they are trying for, it will be very useful." ■