

Some scientists have become historical detectives. Their research is changing what we know about the past. New DNA findings from the worldwide Human Genome Diversity Project show that Native Americans came across Beringia from a homeland in Siberia between 15,000 and 30,000 years ago. The DNA also shows reverse migrations. (Some went back home.) Inside each of our cells are 3 billion nucleotides shaped like coiled ladders—our DNA. We inherit all those nucleotides, so by studying them we can tell a lot about who we are and where we've come from. The Genome Diversity Project's North American headquarters is at Pennsylvania State University.

Beringia existed between 25,000 and 14,000 years ago.

3 In the Beginning



Ice Age bison were much larger than their descendants are today.

Watch that band of people move across the plain. They look hungry and tired. The tribe is small, just twenty people in all, and only six are men of hunting age. But they are brave and their spears are sharp, so they will keep going. They follow the tracks of a mammoth.

If they can kill the mammoth—a huge, woolly elephant—they will feast for much of the winter.

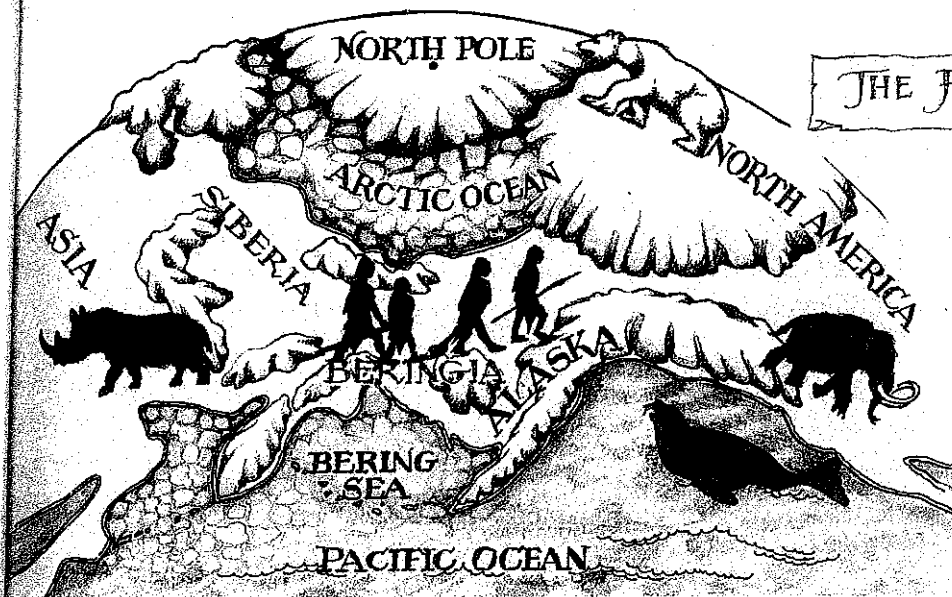
The trail of the great animal leads them into a wide grassy earth bridge, that stretches between two continents. They have come from Asia. When they cross that bridge they will be on land that someday will be called America. The trail of the mammoth leads them from Asia to a new world.

They don't realize what a big step they are taking. They don't know they are making history. All they know is that they have lost the mammoth. He has outsmarted them. But it doesn't matter; the new land is rich in animals and fish and berries. They will stay.

All that happened a long time ago, when families lived in huts and caves and the bow and arrow hadn't even been invented. It was a time when ice blankets—called *glaciers*—covered much of the northern land. We call it the Ice Age. Some of the glaciers were more than a mile high. Nothing humans have built has been as tall.

If you look at a map of the world today, you will find the Bering Sea between Asia and Alaska. The distance is short—just 18 miles—but the sea is icy and treacherous. Now, this is strange, but true: in the Ice Age, that region had a mild climate. And that 18 miles, which is now sea, was land. It was an earth bridge—1,000 miles wide—with open grasslands, clear lakes for fishing, and even some forest regions. Much of the earth's water was then frozen in glaciers, so

THE FIRST AMERICANS



During the Ice Age much of the earth's water was frozen in glaciers. The oceans were a lot smaller and lower, so there was more land exposed. The continents and islands were fatter and there were land bridges where now there is ocean.

there was more land and less ocean everywhere. That long-gone land between the continents is known as Beringia. It was a good place to live.

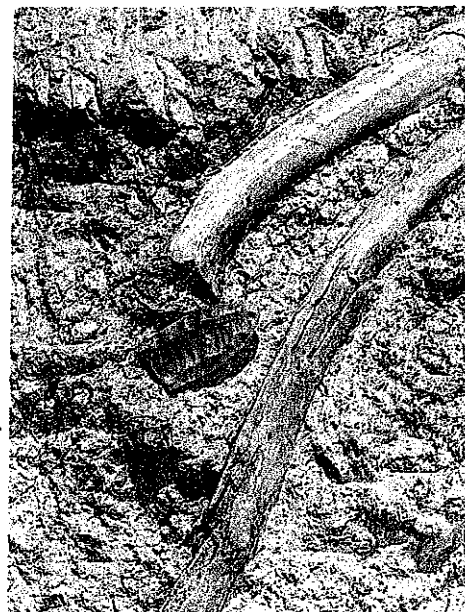
Big animals came to Beringia; people came, too. Some of the people walked there; some came by sea. There was lots to eat. For everyday dining, the hunters and the fisherfolk lived on small game and small fish—but they had the skills to kill mammoths and whales, and when they could, they did. The mammoths and giant sloths and camels were plant eaters, and only moderately dangerous. It was the meat-eating animals—the saber-toothed cats, the maned lions, and the huge bears—who must have licked their lips after munching on humans. That was the way of the hunting world.

Journeying by sea may have been safer than by land. And these people were very good sailors. In boats covered with animal skins, they could explore and settle the coastline. Gradually, we think, the land rovers and the seagoers took a big step—onto the new continent.

Alaska, where the hunters went, seemed like a fine place. There were seals, bison with big curved horns, birds called ptarmigans, and other good things to hunt and eat. Glaciers covered large parts of North America, but much of Alaska and Siberia was free of ice.

More hunters came with their families. At first there was plenty of food, but after a few years (maybe it was a few thousand years) the land seemed crowded. There was no longer enough game for everyone to hunt.

Each year, when the hunters saw birds fly south, they wished they could fly over the mountains of ice. They watched the animals and found there were ways around and through the thick glaciers.



About 10,000 years ago, near what is now Folsom, New Mexico, a hunter stuck a flint spear between the ribs of a bison. The skeleton lay where the bison had fallen. Slowly, it turned to stone. In 1927 it was dug up for us, the hunter's descendants, to marvel at.

Some of them followed the herds east, into Canada, until they reached some great lakes; then they took those waterways south onto the vast plains of North America. Others may have followed a narrow beach-side path, with high glaciers on one side and the ocean on the other.

It was worth the trip. They found grasses and nuts and berries to eat. They found a hunter's wonderland: there were antelope, musk

Old Mysteries and New Discoveries

Just Call Him Kenny

In the summer of 1996, two college students were wading in the mighty Columbia River, near the town of Kennewick in Washington state. They stumbled over some human bones and took them to a coroner (a public official who investigates suspicious deaths). The coroner thought the bones belonged to a 19th-century pioneer. He turned the skeleton over to Jim Chatters, a local anthropologist (a scientist who studies humans). Chatters thought the bones looked old—maybe very old. He took the skeleton to a hospital for a CT scan and contacted archaeologists (ar-kee-OLL-uh-jists: scientists who study materials from the past).

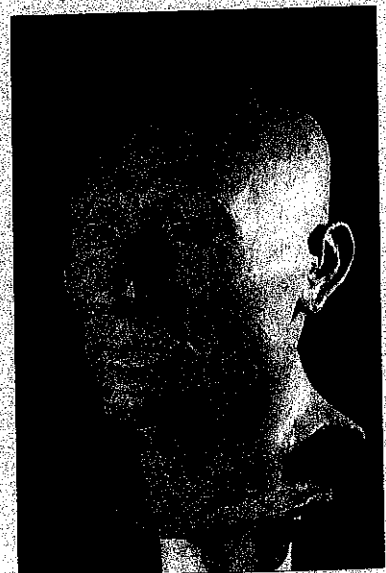
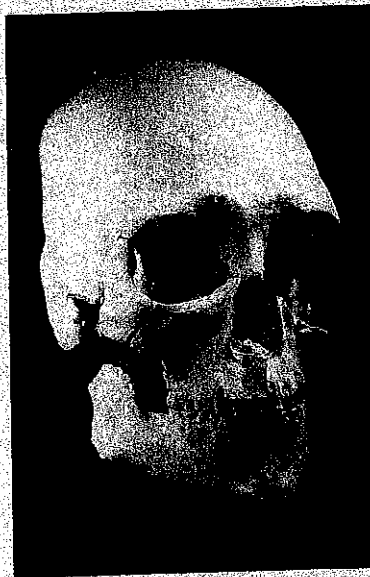
When the scientists looked at the fossils, they realized these weren't 100-year-old pioneer bones. They were much older. The bones belonged to a tall, thin man, about 45 years old. A stone spear point was stuck in his hip. Six of his ribs had been broken and he had bashes on his head and shoulder. He had

lived for months, maybe years, with those wounds. Clearly, this man had enemies. But if he was the victim of a crime, it happened a long, long time ago. It's been a while since people used stone-tipped spears.

The scientists did some radiocarbon dating (see page 62) and found that the skeleton, now

called "Kennewick Man," was more than 9,000 years old! His bones were among the oldest ever discovered in North America. That old fossil was about to startle the scientific world.

Kennewick Man did not look like today's Native Americans. From where had he come?



Using a plaster cast of Kennewick Man's skull (left), anthropologist James Chatters and sculptor Tom McClelland made a model (right) of the way his face might have looked when he was alive, more than 9,000 years ago.

ox, bighorn sheep, lions, deer, moose, fox, otter, beaver, saber-toothed tigers, and bison. Some of the animals had come from Asia too, by walking over the earth bridge, or by swimming in the sea.

In America, animals had grown big—bigger than any animals you have ever seen. Some beavers were as large as bears; and birds—great vulture-like teratorns—had wings that reached 15 feet from tip to tip. Lions were huge; moose antlers measured eight feet across.

At first it was thought he might be European. But after much study, and much controversy, most experts agree that he came from Asia. What about his unusual looks? Some scholars say that Kennewick Man resembles the Jomon, people who lived in Japan thousands of years ago, and also a later people, the Ainu, who once lived in Japan's northern islands. (The Ainu had light skin and often gray eyes.) Our Kenny also bears a resemblance to some aboriginal (earliest) Polynesians. He is unlike contemporary Indians or any modern people. He was part of an Ice-Age culture that existed 450 generations ago. His bones tell us that he ate mostly fish, but we don't know much else. Since his discovery, similar bones have turned up elsewhere. The field of American anthropology is in ferment. Kennewick Man's story is a mystery that still needs solving.

Big Deal Bones

In 1976, some workmen in Monte Verde, Chile (near the Pacific coast), were making a trail for their ox carts when they

uncovered mastodon bones. There haven't been any mastodons around for a long time, so scientists who heard about the bones got excited. They came to see for themselves. They found more than bones. They found stone tools, rounded throwing stones, footprints, even some mastodon meat—all preserved in a peat bog. The fossils turned out to be at least 12,500 years old. And that rocked the world of science.

Before the find at Monte Verde, experts thought that people first arrived in North America about 12,000 years ago—and that they all came by way of Beringia.

Those fossils make that thinking out-of-date. Now no one is sure when the ancestors of the Monte Verde mammoth hunters came to this continent, or how they got here.

There's more to this mystery. Stones found near Monte Verde have marks that are 33,000 years old—some scholars believe they were chipped by human hands! (But others don't agree.) Other findings, including

Archaeologists
digging in the far north have found bones of a huge, ferocious, meat-eating bear. It could run as fast as a horse. Did he chase some people south?

a 12,700-year-old skull found in Mexico City, have added to the mystery. This person, nicknamed Peñon Woman III, looked different from most of today's Native Americans. Some scientists suggest she could have come from Australia, by way of Japan. Others say she could have been part of an early migration from Europe. Archaeologists and anthropologists now say that peoples came to America from many places. Some may have arrived even before the great Ice Age began about 25,000 years ago. Some might have come by sea following an Antarctic route. Others may have come from Iberia (Spain and Portugal) in skin-covered boats across the narrow Ice Age ocean.

The study of ancient migration is heating up. Lots of people are out digging. You can expect them to find more relics. Maybe you can be one of them (a digger, not a relic). Are there any digs in your area? If you have access to the Internet, you can find web sites that tell you about archaeological digs and whether they welcome volunteers and visitors.

Early people all over the world were hunter-gatherers. And then many of them became farmers. They settled down. Why? Most experts say it wasn't because they wanted to stay in one place. Or because farming life was easier or better (it often wasn't). But farming helped more families survive (which led to larger populations and the need for more and better farming).



Some ancient animals—like the musk ox—are still around. They survived mountain lions, bears, changing climate, and, toughest of all, humans.

North America was a hunter's heaven, and big game hunters had arrived. Someday those hunters will be known as Clovis people—because, in the 20th century, their spear tips will be discovered along with mammoth bones at Clovis, New Mexico. Spear points with bison bones—found near Folsom, New Mexico—will indicate that some early Americans hunted animals, like bison, that travel in herds. These versatile hunters—who also kill and eat birds, fish, foxes, and turtles—will thrive in North America.

Those Clovis people weren't the first Americans. No one is sure who arrived first. Some very old artifacts—about 22,000 years old—have been discovered in Virginia. Their discovery startled archaeologists who thought the earliest humans arrived on the west coast. Virginia is on the *east* coast. So where did those first families of Virginia come from? We don't yet know, but scientific sleuths are trying to answer that question.

We now believe that some early Americans came over the eastern Canadian ice sheets. Others may have sailed directly across the Atlantic, possibly from the Mediterranean world. (On the west coast, some Pacific Islanders may have used the ocean as

a direct highway.) We know that ancient humans explored South America down to its tip.

One thing is sure: Those who came arrived in waves, over centuries, bringing different backgrounds, different skills, and different languages. The American continents were a good place to live—especially as the climate was changing.

It was getting warmer—slowly. Up north, the big glaciers—which were like seas of frozen water—melted and froze and melted and froze. When they melted, the oceans got bigger and flooded some of the land. The earth bridge disappeared under the sea; then, when the waters froze again, the earth bridge reappeared. The pathway through the glacier closed up, then reopened.

Finally, about 10,000 years ago, things settled down much as they are now. Water covered Beringia. It got very cold in the Bering Sea. When all that happened, the animals and people who had come across to the new land were stuck. They couldn't go back to Asia, and no one could join them. America was cut off from the rest of the world.

The camel originated in America and traveled across the Bering land bridge to other continents. The llama (shown here), found in South America, is a modern descendant of the ancient American camel.

