On a morning in early January 2014, the roar of two excavators swept over the landscape along the Main Canal, across from the Vero Beach Airport. The machines dug in tandem, picking up the soil and piling it 100 yards to the west. Back and forth, back and forth, the machines rumbled, removing the overburden to expose the excavation surface of the Vero Site.

Drop back 99 years to an October day in 1915. Local Vero farmer Frank Ayers poked along the bank of the Main Canal that had recently been dug, looking for ice age mammal bones. He saw a bone protruding from the bank. Florida state geologist Dr. E. H. Sellards would confirm that it was human, thus starting a debate that has continued to this day.

The question over the years was this: Were the human remains at Vero “Adam and Eve in the Garden of Eden,” as some newspapers at the time suggested; were they prehistoric ice age people; or were they merely more recently buried Indians?
Noted paleontologist Richard Leaky describes the evolution of humans as occurring in many places. Like “taking a handful of pebbles and flinging them into a pool of water . . . [,] each pebble lands is a point of transition . . . and the outward-spreading ripples are the migrations of true modern humans.”

Homo erectus (Latin for “upright man”) evolved about 2 million years ago, most likely in Africa, and migrated into Europe and Southern Asia. This human species, with a receding forehead and a smaller head and larger teeth than a modern human, existed until 200,000 years ago.

The species to which all modern humans belong is Homo sapiens (Latin for “wise man”). This species consisted of two groups. The Homo sapiens Neanderthal was the first. Its name came from the Neander Valley in Germany, where its remains were initially found in a quarry. It evolved from Homo erectus into its final form in Europe 150,000 years ago. These people had no chin and their foreheads sloped backward. They were shorter, stockier, and stronger than modern humans.

The second group was a more advanced Homo sapiens, called Cro-Magnon after a location in France. Their remains were first found in a
rock shelter during a road construction. There were several skeletons in what was considered a burial site. They originated at about the same time as the Neanderthals but in Africa. They were the second great human migration out of Africa, following Homo erectus. This Homo sapiens group moved into the Near East 100,000 years ago, into Southern Asia 70,000 years ago, and into Europe 50,000 years ago. By 30,000 years ago the Neanderthals had disappeared from Europe. Had they been absorbed by their Cro-Magnon Homo sapiens cousins through interbreeding? There is as yet no answer to the question of why the Neanderthals disappeared.

The Cro-Magnons later would be designated as “early modern human.” They showed traits unique to modern humans including the tall rounded skull with a near vertical forehead. These people with their modern brain capacity developed thin-blade technology and attained the skill to produce a thin sliver of stone for use as tools and projectile points. They painted ice age mammals on the walls of caves in Southern France. These early modern humans had also spread eastward across Asia, reaching Siberia 40,000 years ago. There they were in position to migrate into the Americas.

The ice age began 2 to 3 million years ago. This age consisted of roughly 100,000-year cycles, during which the earth cooled to form great continental glaciers and then warmed melting the glaciers. These fluctuations had a great impact on the earth’s climate, oceans, and terrain. As the continental glaciers formed, rising as high as two miles above the land, they absorbed ocean water. This lowered the sea level 300 to 400 feet below present-day levels and extended North American shorelines out as much as 50 miles on the West Coast, into the Pacific, and 200 miles on the East Coast, into the Atlantic. Florida almost doubled in size. The glaciers gouged out the Great Lakes, caused the Mississippi River to change its flow from north to south, and formed the St. Lawrence River, San Francisco Bay, and Puget Sound. Temperatures were 20 degrees Fahrenheit cooler near the ice sheets and almost 10 degrees cooler in the
Tropics when Arctic water flowed south. Northern Spruce trees grew in Florida. Mammals migrated south. As a noted archaeologist said, “Ice Age Florida, though a bit cooler and moister, would have still been the choice destination for your Pleistocene Christmas vacation.”

These hot/cold, 100,000-year cycles were driven by the earth’s regular variations in its relationship to the sun, which affects the amount of incoming solar radiation received. These include the shape of the earth’s orbit, the tilt of its axis, and its side-to-side movement. All this causes climate change and cyclic glacial activity.

The Last Glacial Maximum, as it is called, occurred roughly 20,000 years ago. The great glaciers covered the northern part of Europe. On the North American continent ice covered all of Canada, the northern part of the United States, from the Pacific to the Atlantic. It penetrated into the Midwest as far south as Indiana and crossed Pennsylvania to New Jersey and Cape Cod.

The great glacier across the North American continent lowered the sea level, providing a land bridge between Siberia and Alaska across the Bering Straits known as Beringia. Due to climate conditions Siberia and Alaska were ice free. Humans could now migrate to the North American continent. It was not until the 1930s that the land bridge theory, covering what today at its narrowest is the 50-mile-wide Bering Strait, was accepted by archaeologists as the way that humans arrived in the Americas. The thousand-mile-wide bridge of open grassland was much like an African savannah, but colder.

But these migrations faced the huge ice barrier across North America. Another theory from the 1930s, which suggested that humans traveled down a difficult but perhaps passable corridor that formed as the glaciers melted after their peak, began to be accepted. Two ice masses, the Laurentide ice sheet to the east and the Cordilleran ice sheet to the west, split 12,000 years ago. This crack began in Alaska, passed through what are now the Canadian provinces of Alberta and eastern British Columbia, and ran along the eastern edge of the Rockies into the United States. Were humans actually able to migrate south this way at the time?
MAMMALS AND HUMANS

The great mammals, or the megafauna, as archaeologists call them, were already in the Americas to greet humans when they arrived. While the mammals, like humans, had originated in Africa, they had been on the earth long enough to pass across Beringia during previous glacial periods of low sea level. The mammoths had been around for two million years, giving them plenty of time to spread southward across the Americas from Alaska to Florida and even into Central America. Until it went extinct, the Columbian mammoth seemed able to adapt to changeable climates, both cold and warm. The woolly mammoth, a smaller version and less abundant, penetrated no farther south than present-day Kansas.

The Columbian mammoths were 14-feet high at the shoulder and weighed up to nine tons. They used their long curved tusks, as much as 16-feet in length, to dig up grasses, fight off predators, and attract mates. Primarily grazers, they ate up to 600 pounds of grass a day. They had four shoe-box-size teeth, flat with parallel grooves and ridges that were described as looking like “the bottoms of running shoes.” These teeth
were built to crush and grind vegetation. Over a 60-to-80-year lifetime they grew six replaceable sets. When the last set wore down, they eventually starved and died.

The cousins to the mammoth, the shorter stockier mastodons (10-feet high at the shoulder), had an entirely different set of teeth. Unlike the mammoth’s, their teeth were in rows of conical cups. With these teeth the mastodon browsed on shrubs and trees, using their 10-foot tusks to break up bark and branches. They presumably were more prevalent in the forests of the eastern United States, but they ate swamp plants as well and liked bogs. (The frequent finds of both mammoth and mastodon bones together at a wet spot like Vero would indicate that both the mammoth and the mastodon thrived in a similar environment.)

Joining the mammoth and mastodon as part of the megafauna was the great ground sloth, which had the bulk of a bear but the height of a giraffe. They lumbered along eating grass. A huge armadillo-type mammal weighing in at three tons would be described in modern times as looking like the old Volkswagen Beetle. Then, throw in the tiger tooth cat with two long, fang-like upper teeth, the rhinoceros-size glyptodonts (a huge armadillo), gigantic bison, dire wolves, and ancient camels, llamas, horses, and tapirs. The ice age humans had an exciting menagerie of mammals with which to coexist.
**Figure 5.** Giant ground sloth, one of the megafauna like mammoth and mastodon (illustration by Dann Jacobnus).

**Figure 6.** Tapir, also found at Vero site (illustration by Dann Jacobus).
The base of knowledge of the Ice Age and its people had broadened since the Vero discoveries. Would archaeologists, or at least some of them, begin to look at the antiquity of Vero Man in a different light?

FOLSOM

Two events in New Mexico changed the thinking about when the first Americans arrived. In 1908 most of the town of Folsom, New Mexico, was washed away in a flood. While out riding after the flood, a black cowboy, George McJunkin, saw a collection of bones exposed by the torrent of water that churned up the bottom of an arroyo called Dead Horse Gulch. Born a slave, this self-educated, curious man who studied geology and natural history realized the significance of his find. He knew the bones were from bison, but these bison were far larger than the modern buffalo. He tried to no avail to contact scientists in the Southwest about his find. He died in 1921.

Finally, in 1926, Jesse Figgins, director of the Colorado Museum of Natural History, initiated a dig in the area. His purpose was to find a bison skeleton that he could reconstruct for his museum. Over three years 32 bison skeletons and 26 spear points were discovered. The bison were huge, 12 to 15 feet high at the shoulder.

It was presumed that at this site a band of 30 humans were proceeding north into Colorado. They came upon a group of bison and herded them into a canyon. They then slaughtered the herd with spears that were either thrown or launched with atlatls from the top of the arroyo. Other than the projectile points from the spears, no other evidence of human beings was found. No shelter and no tools were discovered. If there had been a campsite nearby, perhaps it had washed away.

At Vero human remains were found with mammals but were otherwise unconnected, making it difficult to refute the human burial theory. At Folsom human remains or artifacts other than projectile points were not present. However, one of the projectile points was found in place (in situ) lodged between the ribs of a bison skeleton.

The so-called Folsom point was unique. It was three to five inches long with a shallow, but broad, indented groove called a flute running almost the entire length of the point. It took a sophisticated process of