

1491: New Revelations of the Americas Before Columbus Study Guide

1491: New Revelations of the Americas Before Columbus by Charles C. Mann

(c)2015 BookRags, Inc. All rights reserved.



Contents

1491: New Revelations of the Americas Before Columbus Study Guide.....	1
Contents.....	2
Summary.....	3
Chapter 1: A View from Above.....	4
Chapter 2: Why Billington Survived.....	6
Chapter 3: In the Land of Four Quarters.....	8
Chapter 4: Frequently Asked Questions.....	10
Chapter 5: Pleistocene Wars.....	12
Chapter 6: Cotton (or Anchovies) and Maize.....	14
Chapter 7: Writing, Wheels, and Bucket Brigades.....	16
Chapter 8: Made in America.....	18
Chapter 9: Amazonia.....	20
Chapter 10: The Artificial Wilderness.....	23
Chapter 11: The Great Law of Peace.....	25
Important People.....	28
Objects/Places.....	36
Themes.....	41
Styles.....	47
Quotes.....	49
Topics for Discussion.....	52



Summary

Author Charles C. Mann is accompanying archaeologists Clark Erickson and William Balee on an expedition to South America. As they fly into the the remote Beni of Central Bolivia roads and houses begin to disappear. The Beni is covered half the year with a sheet of water from melting snow and the relentless rain. The scientists wanted to explore the region because it is one of the only places on earth whose inhabitants have never seen men with cameras. It is a region that is largely untouched by modernity but promises to be rich in the history of the eras before and even after 1491.

The archaeologists are seeking to answer mysteries for which solutions have thus far been elusive. They want to discover when the first Indians arrived in the area and where they migrated from. The answers are buried in time and in the hearts and minds of the Indians who lived for centuries in the Americas before the European "invasion." The scientists who visit the area are focused on finding answers that may be found in broken pottery, long-ago abandoned cities and mummified corpses buried in mysterious earthen mounds.

Accepted science and conventional wisdom has taught us that these early Indians, referred to as paleo-Indians, who inhabited the Americas – North and South – were vapid, inane savages that were frozen in time. These Indians, according to scientists of yore, lived exactly the same for centuries without many or any advancements or innovations. They contributed absolutely nothing to toward the betterment of mankind.

There are different opinions that are gaining the advocacy of modern-day scientists that disagree with that description. They don't base their disagreement on their own feelings or on speculation. Scientists and researchers have discovered relics and artifacts that paint an entirely different picture. Some of the most important innovations developed by the Indians were in agricultural processes and in the preservation of the woodlands.

Like an episode on CSI, the scientists are using mitochondrial DNA testing to learn the possible origin of the early Indians of the Americas. Sites have been discovered that prove the Indians lived in the Americas long before formerly thought. More sites have been discovered that predate even those discoveries. The subject of when and how the Indians arrived in the Americas is a controversial one and a matter that has more questions than answers.

One tip that the modern world can take from the paleo-Indians is that man should shape his environment to suit his needs but take precautions so that it is not destroyed. Many scientists are beginning to believe that the rainforest wasn't a natural phenomenon but rather an invention of the Indians.



Chapter 1: A View from Above

Summary

Author Charles C. Mann, archaeologist Clark Erickson and William Balee an anthropologist, traveled to the Beni which is a Bolivian province the size of a combined Illinois and Indiana. Archaeologists and researchers had been drawn to the area because it was one of the only regions on earth in which its inhabitants had never seen Westerners with cameras.

Erickson believed that the structured landscape which featured tall mounds had been designed by an advanced society that lived a thousand years before. Erickson and Balee were both of a new school of thought about the nature of societies that existed in the Americas prior to the European “invasion.” They believed that these societies were not small and isolated and that native Indians had a much greater impact on their environment than previously thought. They also believed that the continents had not been predominantly wilderness.

Many experts ascribing to the old school strongly disagree including Betty J. Meggers of the Smithsonian Institution and Dean R. Snow an anthropologist at Penn State University. There are suspicions that supporters of the new thinking have political motivations. A leading supporter of the environmental movement, William Denevan, believes that the notion that the land was untouched is a “pristine myth.” Green activists fear that if this theory is correct the efforts to restore the natural earth will be in jeopardy.

The research team came across a fifty-nine foot tall forest mound filled with pieces of broken pottery known as Ibibate. Erickson believes that the mound was a dumping ground for refuse. The vast number of crocks found on the hill indicating that a large labor pool had been needed to create the vast amount of pottery, an indication of an advanced society. From the top of the hill they could see an ancient raised causeway abandoned long ago.

Chiro and Rafael were assigned as guides during the research expedition. They were Siriono Indians, a society that had been closely researched and studied by a young doctoral student named Allan R. Holmberg. He wrote about the Sirionos and the Beni in his book, *Nomads of the Longbow*. He described the tribe and the region as isolated and backward but was wrong on both counts. His depiction of them became known in many circles as “Holmberg’s Mistake.” Bolivia did not welcome scientists who wanted to visit and prove Holmberg wrong and the country was a dangerous place visit in the 1970s and 1980s due to its robust drug trade.

When conditions improved, scientists began to filter in and were able to dispute inaccuracies about the people and the region. In the 1970s, grad student William Denevan learned that the Beni possessed the remains of many ancient cultures. Erickson believed that the region was first settled 3,000 years before by ancestors of



the Mojo and Baure, two highly developed societies. The villages were spacious and guarded by moats; the causeways were used by millions. Erickson considers the Beni region to be one of mankind's greatest accomplishments.

Unfortunately, Holmberg's Mistakes were considered to be accurate representations of the Americas before 1492 and were embedded into public persona via textbooks, movies, books and the news media. The Bering Strait theory that native Indians traveled from Russian down the Bering Strait into the Americas was embraced by many experts for centuries. However, archaeologist Vance Haynes discovered a civilization in Chile that was estimated to be 12,000 years old which debunked the Bering Strait theory. Most scientists believe that as many as five settlement episodes occurred before Columbus set foot on the Americas.

Analysis

Author Charles Mann is a writer who accompanied many scientists on archaeological expeditions to North and South America in search of answers about the first Indians who settled in the Americas, how they got there, how advanced they were and what impact they had on their environment.

Mann's book starts out with an expedition he joined to the Beni which is a Bolivian province that is pristine and largely untouched by modernity. The scientists he accompanied, Clark Erickson, an archaeologist and William Balee, an anthropologist, are scientists who ascribe to a growing belief that early Indians in the Americas were much more populous and advanced than conventional wisdom has taught us.

A good amount of the misperceptions about these paleo-Indians can be attributed to misinformation and the narrow views of earlier scientists who viewed these peoples as backward savages. A young doctoral student named Allan R. Holmberg was one of these researchers who was totally wrong about the early Indians who he felt had been frozen in time and contributed nothing to mankind. His book, *Nomads of Longbow*, is often described as "Holmberg's Mistake." Modern scientists are at work to finally disprove much of what Holmberg reported.

Vocabulary

savanna, tributaries, proclivity, millennia, contentious, ethnohistorical, pristine, putatively, indigenous, bumptiousness, anomaly

Chapter 2: Why Billington Survived

Summary

In March, 1662, a delegation of Native Americans met with foreigners who had recently overtaken an abandoned Indian settlement in what is now southern New England. The group was led by Massasoit of the Wampanoag tribe. Massasoit feared that the tribe's arch enemy, the Narragansett tribe, would take over their territory. The Wampanoag had learned to deal and trade with the interlopers. He agreed to allow the British to stay ashore as long as they wanted if they allied with them against the Narragansett. It was an important historic event. The Brits called their colony Plymouth. Tisquantum, an interpreter, was credited with teaching the colonists how to plant corn. He moved into the Brits' settlement and spent the rest of his days there. Through his planting and fertilizing expertise, the Brits did not starve.

For centuries, the Indians were seen as savages who were overtaken by a more advanced people. However, in the 1970s, a number of scholars began to take a different view of what occurred. Many scientists believe that the Indians were striving to maintain their own culture but were met with unexpected consequences. The North American Wampanoag and the South American Inka had similar reactions to the Europeans. In both instances, the Indians believed that they could benefit from a relationship with the Europeans.

By the early 1600s, the European insurgence was robust. The Brits alone had 200 ships operating off the coasts with hundreds more from other European capitals. They all remarked at the large numbers of Indians and that they were well-defended. If Europeans lingered too long the Indians were not subtle about telling them to be on their way.

Indians died by the hundreds from Hepatitis A. Fearful Indians who fled from a diseased village passed it on to other villages causing the plague to be widespread. The Pilgrims and the Indians both believed that the source of the illness was supernatural and that seers from both cultures predicted future events by the alignment of the stars. Until the tragic illness, Massasoit had led a community of thousands and was an important leader among more than 20,000. After the plague, only 60 remained and within the broader society fewer than 1,000 had survived. The Wampanoag believed that the gods had caused the tragedy. Governor Bradford of Plymouth believed that it was God's will that the Indians die out to make room for the British and other Europeans. The Wampanoag were rendered much weaker than the Narragansett. Due to their lack of contact, the disease had not spread to enemy villages.

The pact that Massasoit made with the colonists endured for 50 years. In 1675 one of his sons grew tired of the colonists pushing them around and launched an attack. Other Indian groups joined the fight which encompassed New England. The colonists won and sold more than 1,000 Indians into slavery. By the time of the American Revolution, fully



one-third of Rhode Island Native Americans were enslaved. In all during the years 1670 and 1715, English slavers sold as many as 50,000 natives as slaves. The enslavement of the Indians was a symbol of their great loss of power and status.

The Europeans defeated the Indians because the Indians refused to massacre entire villages and by then the Europeans outnumbered them due to the epidemics of 1616 and 1633.

Analysis

This section focuses on early North American Indians who, according to Mann, had very civil and cooperative relationships with colonists. The leader of the Wampanoag tribe, Massasoit, was savvy enough to bargain with the colonists and get them agree to ally with them against their arch enemy. An Indian interpreter named Tisquantum taught the colonists how to plant corn, moved into the colonists' camp and basically kept them from starving.

Initially when the Europeans arrived, they were outnumbered by the Indians. However, due to the steady stream of Europeans arriving in the New World and great plagues that took out large numbers of Indians, these early Indians found themselves in the minority. Both the Indians and the colonists believed that there was a supernatural element to the onset of the illness. The Governor of Plymouth believed it was God's will that the Indians die off to make room for the Europeans.

With the Indians outnumbered and tensions rising, conflicts broke out resulting in the defeat of many tribes and enslavement of many Indians.

Vocabulary

sachem, triumvirate, garrulous, ostentatiously, symptomatic, ethnocentrism, egalitarian, malaise, subjugation



Chapter 3: In the Land of Four Quarters

Summary

In the 1960s, anthropologist Henry F. Dobyns worked on Indian birth and death rates and got his hands on every available source including those found in cathedrals and governmental offices. Dobyns made the comparison between the British and the Wampanoag and the Spanish and the Inka. His conclusion was that every Indian culture eventually fell to European aggression. But why?

In 1491, the Inka nation was the greatest empire in the world. The terrain within the empire ran the gamut from rainforest to desert. Politically, the Inka emperor wanted to unite the diverse groups that existed within the empire. As a result, they removed entire communities from their homelands to relocate them and force them to work with other groups. They developed a way for the diverse groups to communicate with a method called "Talking Knots." Pachakuti, the founding father of the empire, is credited with organizational genius in the restructuring Peru.

Peruvians have survived for centuries inhabiting high, steep inclines where crops are difficult to grow and the danger of landslides and earthquakes are ever present. In the terrain between mountain and ocean in Peru a traveler would pass through 20 of the 34 existing types of environments. The Andeans survived through cooperation with other settlements, trade and, last but not least, sheer tenacity. The verticality of their existence forced the settlements to remain small which also aided in their survival.

Peruvian Indian tribes were often very isolated from one another. There were three exceptions to the tendency toward isolation. Several groups united together to form larger confederations: the Chavin, Wari and Tiwanaku people. The Inka empire followed when these earlier empires collapsed. The Inka empire was founded by four brothers and four sisters who left the Tiwanaku empire in Lake Titicaca and stumbled onto what would become the Inka capital, Qosqo. When the family first arrived, the city was comprised of some 200 small diverse groups. The turning point for the Inka was the Chanka offensive in 1438. The leader was Wiraqocha Inka, a valiant prince who vowed to conquer half the world. But when the battle began, he fled with three of his four sons. His son Inka Yupanki refused to leave and led the Inka army to victory over the Chanka. Inka Yupanki renamed himself Pachakuti. The Inka, of course, were later defeated by the Spanish.

How did Pizarro and his small army of 168 men and 62 horses defeat the largest, most populous and richest nation on earth? Pachakuti died in 1471 and was succeeded by his son Thupa Inka a military commander. By 1493, Thupa's armies had penetrated into Ecuador and Chile, doubling the size of the empire. Wayna Qhapaq was named to succeed his father. He saw his role as consolidator rather than conqueror. He believed that if the empire grew any larger, it would be impossible to rule. After Wayna died, his teenage son Washkar Inka ascended to the throne. After several years of battle, another



son Atawallpa replaced Washkar Inka. In 1532, Pizarro, leading his soldiers on horseback, ambushed Atawallpa. The Inka were caught off guard having never seen horses before. The Spanish soldiers took advantage of the Inka's lack of weapons by killing most of them. To buy his freedom, Atawallpa offered Pizarro a large estate.

Between December 1532 and May 1533, multiple caravans carried precious metals, jewels and art from Qosqo to Pizarro's camp at Cajamarca. The Spanish did not hold up their part of the bargain and instead of releasing Atawallpa, they garroted him. There were more battles that followed but the ransom Pizarro received caused the collapse of the Inka empire that had endured five centuries. The Spanish defeated the Inka with horses and steel. The final blow was the disease that depleted the army of its soldiers and the towns of its craftsman, artisans and laborers.

There is much disagreement about the actual population of the Indians before the Europeans arrived.

Analysis

Anthropologist thoroughly researched the Indians of North and South America and the birth and death rates. He concluded that in every case Indians were defeated by Europeans but he couldn't determine why. It was a question that received the attention of many scientists over the decades.

After internal unrest and battles with other cultures, Pachakuti emerged as the Inka leader of the richest and most populous civilization in the world. What baffled researchers was how this obviously advanced nation was defeated by the relatively small army led by Spanish explorer Francisco Pizarro.

Scientists believe there were several elements to their defeat, one was the element of surprise. The Inka had never seen a horse before. They were not indigenous to South America. Their largest land beast was the llama that in no way compared to the horse in strength, size or speed. The Inka were shocked when the short, pale Europeans ambushed them on these strange beasts. Inka weapons were made from wood and other natural elements while the Spanish soldiers wielded deadly weapons of steel. Most archaeologists believe that the Inka were defeated by horses, steel and finally by disease probably carried into their nation by the Europeans.

Vocabulary

audacious, demography, wellspring, hegemony, reciprocity, talisman, conscript, ostensibly, cavalcade, apocryphal, surreptitious



Chapter 4: Frequently Asked Questions

Summary

After the Inka empire collapsed, Hernando De Soto, who had helped Pizarro defeat the Inka, and his army spent the next four years in what is now the southwest United States looking for gold and destroying every area they passed through. The Indians fought back but were astounded by the Spaniards' guns and horses. The conquistadors killed and raped and pillaged but worse than that they introduced pigs into the region.

The army crossed the Mississippi over to modern-day Arkansas where a soldier reported seeing "great towns" that were defended by earthen walls, moats and archers. Foreigners did not appear in this region until a hundred years later. In 1682 LaSalle passed through the area that he found completely abandoned. Most historians believed that disease had destroyed the robust Indian communities that De Soto had observed. The source of the disease was very likely the pigs that De Soto introduced into the countryside. De Soto's army wreaked havoc across the south and Midwest. Populations fell in great numbers in their wake.

Spanish priests were dispatched to the Aztec empire in 1524, to try to convert the people to Christianity and thus save their souls. They met with priests of Mexica to coordinate their task. Through interpreters the Franciscan priests explained to the Mexica priests that they were sent from the pope. By worshiping false gods, they were hurting God's heart. The Triple Alliance, as the Aztec nation was called, had failed to recognize the One True God. They were pressured to accept the Bible so that God would not destroy them.

The Mexica priests who believed they were on a par with the Franciscans responded that they were also concerned with salvation but could not accept Christianity because it would cause upheaval in the Alliance. Eventually, the Franciscans convinced the Mexica priests to convert. Bernardo de Sahagún, a Franciscan monk wrote about the meeting but never published his writing because he believed that Mexica priests had not actually converted but just gave lip-service to it.

A council of clan elders chose the rules of Mexica. Tlacaelel was considered the presiding genius of the nation during his long life. He was the head of internal affairs and ruled from behind the scenes but dominated the Alliance. He was credited with revolt of the Mexica against their masters and served as a general during the assault. He was considered a visionary and a patriot and believed that it was Mexica's destiny to rule a vast empire. He provided the Mexica with what he believed to be their manifest destiny: keepers of the cosmic order. One alarming result of this manifest was human sacrifice. Tlacaelel declared that the life-energy of the sun god Huitzilopochtli had to be replenished and one way to accomplish this was through human sacrifice. The army was dispatched to find appropriate human sacrifices for the sun god to eat. There was controversy over whether human sacrifice ever took place. The claims were considered



to be racist lies by some, cooked up for political calculations. But Mexica artwork of the era depicts that human sacrifice did occur and on a grand scale. However, the 3,000-4,000 souls that were sacrificed pale in comparison to the many thousands of European executions that were perpetrated in the same time frame.

The Mexica had a grasp on the reality of man's short life on earth. They were uncertain about the fate of the soul. They did not draw comfort from the concept of life after death – after all no one had “lived” to tell about it. Mexica poet Ayocuan believed that truth was only possible through the appreciation of art. There is evidence of early philosophical discussions during which ideas and gossip were exchanged. The wisdom of the Mexica was lost forever through battle and disease. Their ideas were novel and unique because they were isolated from the rest of the civilized world. No one can speculate what would have resulted had the wise men of Mexica been able to discuss their concepts with the philosophers of Europe, the Middle East and Asia.

Analysis

Hernando De Soto who had helped Pizarro defeat the Inka brought pigs into the Americas. Indians did not domesticate animals and were never in close quarters with them like Europeans did. When the pigs were introduced as domestic animals and came in close contact with the Indians, it was believed that they brought on more disease to both North and South American Indian cultures.

This section discusses the pressure that some European clergy brought to bear on the American Indians. It was their goal to convert as many Indians as possible to save their souls. They tried to convince them that not believing in the Christian God would secure a special place in hell for them. But the Indians felt they were just as knowledgeable about the supernatural. The prospect of an after-life was meaningless to the Indians since no one had returned from it to verify that it was there.

The Mexica believed that their destiny was to rule a large empire and to be the keepers of the cosmic order. Therefore, when the European priests invaded their territory telling them how they must believe there undoubtedly was natural resistance to the claims of the interlopers. There is evidence that the Mexica believed that human sacrifice pleased their god. There was a strong philosophical element among the wise men of the Mexica Indians. However, their philosophical musings were cut short when they were invaded and conquered by the Spanish.

Vocabulary

nascent, ambulatory, contagion, pandemics, nadir, ubiquitous, fealty, eponymous, pantheon, evanescence, aesthetic



Chapter 5: Pleistocene Wars

Summary

When European visitors first came to the shores of the Americas, their appearances were shocking to the Native Indians who may have thought they were deities or supernatural beings. Motecuhzoma thought Cortés was the god-hero Quetzalcoatl returning to fulfill a prophecy. The North American Indians like the Wampanoag and the Narragansett initially believed that the Europeans possessed supernatural powers. The Europeans were also impacted by their encounters with Indians. Columbus was convinced that he had landed in Asia, near India, which was why he dubbed the people Indians. A problem was presented to Europeans when it was later learned that Columbus had not landed in Asia. That people existed in this unknown land went against the Bible that proclaimed that all people had perished in the great floods. How did these people get across the great ocean?

Jesuit educator José de Acosta wrote that any explanation about the Indians could not contradict the Holy Bible that taught that all men descended from Adam. Acosta concluded that the Americas and Asia must be joined somewhere. The most widely accepted theory was that the people in the Americas were descendants of the Lost Tribes of Israel. But many scholars and researchers ascribed to the theory which remained the predominant solution to the origin of the Indians until the 19th century. British scientists uncovered a jumble of human skeletons mixed with extinct Pleistocene mammals. The discovery caused a sensation. It was proof that humans lived during the Ice Age. Layman interested in the discovery began to look for evidence to prove the theory. These weekend scientists found “evidence” of Pleistocene Man in a number of states and cities. There were many investigations and even more theories. In the end, there was never dispositive proof that humans inhabited the Americas during the Pleistocene.

Linguist Joseph H. Greenberg concluded in an article in *Current Anthropology* that Indian languages belonged to three main linguistic families: Aleut, NaDené, and Amerind. Christy G. Turner II, a physical anthropologist and contributor to the article, supported Greenberg’s theory based on dental evidence. Arizona State geneticist Stephen L. Zegura, the third writer in the article, stated that the “tripartite division” of Native Americans was without confirmation from a molecular biological point of view. Critics of Greenberg’s theory based their reactions on the belief that the three-migration theory was all wrong.

The discovery in 1990 by a scientific team led by Douglas Wallace found that all Indians belonged to one of four mitochondrial DNA groups, three of which were common in Asia which tended to confirm the three-migration theory. Wallace and geneticist James Neel conducted research on Indian mitochondrial DNA and concluded that the original migration to the Americas occurred between 22,414 and 29,545 years ago – 10,000 years before Clovis, a site discovered in New Mexico that was for years believed by



many to contain the remains of the first Indians who settled in the Americas. Over the years there was much debate about the “Clovis-first” theory. Geneticists Sandro L. Bonatto and Francisco Bolzano believed they proved the one-migration theory and that it occurred 33,000 to 43,000 years ago.

The collapse of Clovis opened the door for other theories including Kennewick Man, a 9,400 year-old skeleton found in Washington in 1997. The reconstruction of the skull indicated that the man was Caucasoid, the implication being that Indians were descendants of Europeans. The majority of scientists agreed that the theory was impossible because of the different mitochondrial DNA found in whites and Indians. Scientists and archaeologists continued to find older and older bones and artifacts. The theories that arose from the findings were based on fact but also on speculation.

The controversies about when and how the paleo-Indians inhabited the Americas will go on ad infinitum. However, all signs point to the fact that the Indians lived in the continents long before experts had for years believed.

Analysis

The author is careful to point out that the Indians had negative reactions to the appearance and bearing of the Europeans just as the Europeans had of them. Religion was an important consideration when human remains were found in North America that were thought to be from the Pleistocene Age, also known as the Ice Age. Jesuit priests were quick to say that any concept about when the Indians first appeared had to be in compliance with the Christian Bible which stated that all men came from Adam. To conclude that people existed in this far away during the Ice Age was sacrilegious.

The Pleistocene discovery caused a sensation and resulted in scores of weekend scientists seeking proof themselves of these ancient men. There were many investigations, claims and conclusions but nothing was ever proved as far as the scientific world was concerned. A number of respected scientists believed that Indians were comprised of three linguistic groups pointing to the probability that there were three separate migrations of Indians into the Americas.

In modern times, research is advancing on the origin of the Indians of North and South America using mitochondrial DNA which provides more conclusive results than regular DNA testing. These scientists have concluded that the same mitochondrial DNA exists in 75% of Indians in the Americas as that in Asians which supports the three-migration theory.

Vocabulary

empirically, shamans, proselytizing, sardonic, voracious, incantations, charismatic, idiom, rancorous



Chapter 6: Cotton (or Anchovies) and Maize

Summary

Jonathan Haas, an archaeologist at the Field Museum of Natural History in Chicago, handed Mann a cloth that he said was 4,000 years old. It was soft and surprisingly well-made. They were standing at a dig on the central coast of Peru. Ruth Shady Solis, a Peruvian archaeologist, was leading the expedition. She had done work a few years back on a Peruvian site to the south that uncovered the oldest known city in the Americas. The new team determined that there were at least 25 cities buried in the mounds in the Norte Chico region. The team was focused on what was buried under the mound known as the Huaricanga mound. The dig revealed a temple that had at the time been the world's largest buildings.

There were two ancient societies in South America that had gone largely unnoticed but were one of the well-springs of human civilization. Mesoamerica was a robust society before Christ. The Peruvian littoral was home to a much older culture. The societies of Mesoamerica developed much of the produce that is used around the world today. They also developed their own writing system and delved into astronomy and mathematics. The Andean civilization was not one of their accomplishments. It developed between 3200 and 2500 BCE.

The sole evidence of a Norte Chico deity is a drawing carved into a gourd. To Andeans, it resembled an early version of the Staff God. Radiocarbon tests indicate that the gourd was harvested between 2280 and 2180 BCE which means that the spiritual tradition originated in Norte Chico and endured for at least 4,000 years. Some scientists believed that the gourd was ancient when the carving was etched. In 2010 an expedition led by Daniel H. Sandweiss of the University of Maine uncovered a city in a dig north of Norte Chico that was purportedly older than Huaricanga. Researchers agreed that earthquakes, landslides and flooding could have been responsible for the collapse of the Norte Chico region. New societies were built on top of the ruins. Peru was host to many diverse cultures over the centuries.

Andean civilizations were largely self-sufficient. There was only one product that the Andean cultures sought from outside their society and that was maize. It was the first innovative product that migrated from Mexico to the Andes. The second was smallpox. Modern-day Mexican tortilla restaurants attempt to preserve local varieties of maize. Farmers supply eight different kinds of dried maize to Amado Ramirez Leyva's tortilla shop where it is ground and hand-pressed into tortillas. Centuries ago game animals began to disappear forcing the hunter-gatherers to focus on the gathering. The people became resourceful and learned how to use plants, nuts and fruits in most satisfying and beneficial ways. Unlike other grains, maize has to be planted and can't reproduce on its own. There is no grain similar to maize in the wild. It is strictly a domestic crop.



In the 1960s, archaeologist Richard S. MacNeish of Phillips Academy in Andover, MA, led a team into Puebla's Tehuacán Valley for early signs of agriculture. They found thousands of maize cobs in a series of caves. There was an on-going debate for years about the origin of maize. Scientists like botanist Paul C. Mangelsdorf believed it was a mix of an extinct wild ancestor and wild grasses. Botanist George Beadle believed it descended directly from teosinte. Other botanists took one side or the other. Mangelsdorf believed small cobs the size of cigarette butts represented the wild ancestor of maize. Another researcher compared the supposed maize ancestor to popcorn from Argentina. There were other theories put forth by researchers and scientists. The debate over the origin of maize was tantamount to the back and forth over Clovis.

In current times, U.S. corporations run large maize-growing co-ops that have pushed the small farmer out of the market. The co-ops can sell the maize for much less than a small farmer. A farmer that Mann met referred to himself as a "man of maize" when Mann asked what tribe he originated from.

Analysis

A Peruvian archaeologist led an expedition to explore the mounds in a region known as the Norte Chico. These mounds were believed to contain as many as 25 ancient societies. The many discoveries of the "oldest" city or culture or human ever found seemed to always be trumped by another discovery that predates it. With each discovery there is always criticism, disdain and controversy over the veracity of the findings even by the most respected scientists.

The author discussed the importance of maize to paleo-Indian cultures in both South and North America. There is no grain that is similar to maize anywhere in the world. It is thought to have been developed as a hybrid of grass and a wild grain but there is no absolute conclusion to the matter. If maize was developed by paleo-Indians in Mexico, it provides more evidence of an advanced society. There is no agreement among researchers and botanists about the origin of maize. However, it was one of the most important developments in the Americas as it fed millions and warded off starvation.

U.S. coops have replaced the small farmers of South America in the growing of maize. These farmers can no longer sell their maize because the American companies can sell it for much less than the farmers can afford to sell it for.

Vocabulary

ittoral, aberrant, agronomical, hyperbolic, conflagration, ubiquitous, consortium, loquacious



Chapter 7: Writing, Wheels, and Bucket Brigades

Summary

In 1859, a six-foot tall stone sculpture of a human head was found buried in Mexico's southern isthmus near Tres Zapotes. In 1938 Matthew W. Stirling, Director of the Smithsonian Bureau of American Ethnology came to the area to view the statue up close. Stirling figured there was a buried city underneath the mounds and led a team to dig up the finely sculpted head. It led to the discovery of a then unknown culture that Stirling named the Olmec. It was an advanced society that developed a numbering system consisting of dots and bars similar to that developed by the Maya. There was evidence that the Tres Zapotes culture was in existence in 32 BCE before any known Maya site and that the Maya originated much earlier and west of what was thought to be its homeland.

Italian Hilarion Daza seized the reins of power in Bolivia. He immediately raised taxes on guano mines owned by Chileans. The Chilean army attacked in outrage and took over a large area of Bolivia as well as a piece of Peru which had allied with Bolivia. Daza fled to Italy taking the majority of Bolivia's treasures with him. A wide pillar of rock called the Cerro Baul was the meeting ground for two of the largest societies in the Americas, the Wari and the Tiwanaku. Their roots were in Norte Chico, worshiping the same deity, the Staff God, as the Norte Chico culture. The Wari culture was more conventional and had a centralized government. It came to prominence in the sixth century A.D. They survived droughts and floods mainly because of their skills in terracing and irrigation.

The civilization thrived at its high altitude with potatoes being its main source of nourishment. Maize did not grow above 14,000 feet. Yet the people wanted maize – it was the food of the elite. They were able to use the shady terraces to grow maize crops despite their lofty altitudes. The Wari religion spread and the culture reclaimed over a million acres of cropland. Their distinctive terraces were copied and seen throughout the region. Wari, the eponymous capital city, was closed off behind high walls and was comprised of many narrow streets. The walls were intended more for privacy than protection. Their positioning made them rather vulnerable for assault. Houses for the elite and the commoner were designed alike. To supply water to their city that was built on a mesa, the Wari had to carve out a 15-mile canal through the mountains to the water source.

The Tiwanaku were polar opposites of the Wari. Chirpa was probably the first settlement around Lake Titicaca where Tiwanaku city was ultimately located. It dates back to 900 BCE and was built in the Norte Chico style. The economy depended on raised-field agriculture. By the time Christ was born there were two early settlements: Pukara to the



north and Tiwanaku on the opposite side. Around the third century AD, Pukara was in decline.

The end of Cerro Baul gatherings occurred around 800 AD. It appears that a last banquet turned into a drunken brawl during which structures were set on fire. Declines had already been experienced by the Wari and the Tiwanaku. Out of their ashes, a new society called the Chimor arose which was at the time the greatest empire ever seen in Peru. Chimor grew both maize and cotton and had a captive labor force that built a 53-mile canal to a water source. But the canal was ill-designed and failed in its purpose. Chimor dispatched armies outside its territory and returned in victory. The city was comprised of large cathedral-like ceremonial complexes and its streets were limited to the elite. Structural beams were made of gold and silver. Rulers were considered divine and were mummified in death. Since they could not die, the mummies remained in their homes and could not be moved.

Analysis

Archaeologists love nothing more than finding something that had never been discovered before. In this chapter, the author describes a huge discovery made in 1859 by Matthew W. Stirling, Director of the Smithsonian's Bureau of American Ethnology. He and his expedition team were able to determine that huge statues of human heads were made by a then unknown culture that he called the Olmec. The numbering system that was displayed on the statues told the scientists that the culture was connected to the Maya who had a similar numbering system.

The Olmec may have been an ancestor of the Maya. With the relics that exist after so many eons, the mystery of which culture came first and which inspired the other is often an unknown. The scientists are careful not to make definitive conclusions because they could be wrong and such comments bring on a sea of criticism of those who disagree.

The ancient civilizations of the paleo era all provide share one common element. They all appear to be much more advanced than what school children are taught and what is reported on the media. These people somehow moved huge stones that weighed many tons, built canals and causeways that were miles long and had armies to protect their people. There are many mysteries about these people that will probably never be solved.

Vocabulary

isthmus, anomalous, indefatigable, enigmatic, mnemonic, augury, apogee, implacably, exemplary, evocative



Chapter 8: Made in America

Summary

Chak Tok Ich'aak's last day on earth was January 14, 387 AD. He was the King of Mutal, the largest state in the Maya civilization. He ascended to the throne in 360 AD when Maya was comprised of only 60 small statelets scattered far and wide. During his reign, Chak Tok brought diplomatic stature and commercial clout to the kingdom. He also reached out to other cultures in Mesoamerica to establish trade agreements. But an army from Teotihuacan led by Siyaj K'ak' was on the march and had taken control of most of Central Mexico and was looking for new conquests. Chak Tok "passed on to a better place" when the enemy's knife was driven into his heart. His death brought chaos to Mesoamerica. Once taken over by Teotihuacan, the Mutal culture advanced and was elevated in status. The collapse of the Maya civilization a hundred years later remains largely a mystery.

Why did the Maya abandoned all their cities? Archaeologist David Webster hated being asked that question. It was a daunting subject with no real answers. The Maya failed state was the only large-scale society that was not replaced by another culture. Mayanist Sylvanus G. Morley of Harvard developed the widely accepted theory that the Maya had stripped their resources and were basically starving when they fled for greener pastures. Scientific measurements confirm that they destroyed the woodland forests which caused erosion and floods and made the land unfit for planting. The dry spell that hit the region in 800 or 900 AD was the final straw. While conservationists often cite Indians as one with the spirit, the Maya Indians destroyed their entire civilization because they devastated the nature surrounding them.

In 1500 BC an ancient structure was discovered in Poverty Point, LA, that resembled an amphitheater. After another 700 years, a series of mounds called the Adena were discovered in the Ohio Valley and were the first determined to have been used as tombs. Tobacco was grown in the Adena villages. The Mississippi and Ohio Valleys and a majority of the Southeast comprised the Eastern Agricultural Complex which was a major cultural innovation but over the years faded in importance and disappeared. Adena influence in agricultural and social issues was widespread. Their influence was not forced through military action; it was strictly cultural.

The Maya revamped their landscape to facilitate their water supply and improve their agricultural results which allowed their cities to expand at the same time making them more vulnerable to attack. Although the Maya people continued to exist, their cities did not survive. The collapse of the Maya has been attributed to overpopulation and drought. Water levels were at dangerous lows and a number of experts believe that many Maya starved and perished from dehydration.

Other scientists including geographer Christy Turner didn't believe that the Maya could die from dehydration. For centuries they had successfully managed their water supply. It



was more likely that the many wars that the southern cities were subjected to over the centuries played a big role in the civilization's collapse. The rulers became distracted and uncaring and failed to address ecological problems that could have been resolved.

In recent times, there has been focus on the environmental impact that Indian societies had. Some anthropologists believe that the Amazon rainforest was created, that it is an artificial object.

Analysis

One of the biggest mysteries about the South American paleo-Indians is what caused the collapse of the Maya civilization. It was one of the most advanced in the history of South America up to that time. There is evidence that the Maya deserted their cities that had served the people for many years. The possible solutions to this puzzle are based partially on facts and partially on speculation since there it is impossible to discover any dispositive proof.

While some scientists believe that the people were starving and dying of thirst and fled their cities, other scientists find this scenario impossible to believe. It is well known that the Maya had for centuries protected their water sources and provided safe drinking water to their people. They had literally cut through mountains to build canals from water sources to the cities. Other experts believe that the wars and internal fighting led to the collapse of the civilization.

In recent times, scientists have begun to consider the possibility that the Indians created the rainforest. Therefore, environmentalists who are asking that we maintain the forest in this its natural state are way off base. The Indians had shaped the rainforest to suit their needs. It was a different woodland before they transformed it for their own purposes. This theory is not well-received by conservationists who believe that today's rainforest was always the way it is now.

Vocabulary

euphemism, hubris, extolling, palisades, egalitarian, archipelago, surreal, multifarious, obsidian, pernicious, xenophobia, hegemonic, scalawag, mendacious



Chapter 9: Amazonia

Summary

The lack of historical accounts of the pre-Colombian past makes it difficult to discover the secrets of times gone by. Much of the history of American Indians has come from European explorers and missionaries. However, many of these documents are shaded by biases and self-aggrandizement.

Modern anthropologists, archaeologists, geographers and historians believe that the Indians left their mark on the tropical forest. They are beginning to think that the Amazon rainforest was the result of interaction between the environment and humans. Perhaps early explorers like Gaspar de Carvajal did see heavily populated regions. Conservationists detest this theory; they cling to the idea that the rainforest was always pure and uninhabited. But signs point to the fact that the Indians of South and North America found ways to manage their environment to make it work for them.

Not all Amazonia rainforest is rainy. It is not a forest but rather a savanna. The Beni in Bolivia is a large part of the forest. The basin takes another big chunk. Actual "rainforest" comprises only 5-10% of the entire region. The soil in the rainforest is poor. The oppressive heat and relentless rain have eroded the surface and depleted its minerals and organic compounds. The nutrients in the rainforest are found in the vegetation that covers the soil. The rainforest is on the edge of collapse.

About 4,000 years ago, the Amazon Indians were growing a large variety of crops – at least 138 different types. The staple was manioc, a root that is chopped and ground in to a number of different foods. Living in the Amazon basin the Indians had to deal dense jungles. To cut through them the Indians used the stone ax. It was estimated that bringing down a small tree would take a man 115 hours if using this implement. As soon as the Indians got wind of the steel axes the Europeans had they were eager to have them. Once they had these implements, there was a huge impact on trade in the area and, on the down side, they brought on conflicts and war. Steel to the Yanomamo "was like gold for the Spanish." The steel implements brought about slash and burn agriculture.

The introduction of swidden has been one of the reasons for the loss of tropical forest. It does not allow re-growth nor is it efficient or environmentally sound. The burning destroys most of the nutrients in the vegetation and pours large amounts of carbon dioxide into the air. The addition of swidden is a fairly recent practice and has not had enough time to cause real damage. Indians have used the land for thousands of years and whatever steps they took before the addition of swidden sustained the ecology.

Archaeologists are trying to determine how paleo-Indians reshaped and managed their environment to suit their needs. Agricultural geneticists believe that important foods like peanuts, broad beans and several species of chili peppers were developed in the



western Amazon. Rubber was an important resource developed by the Indians. The manioc tuber which had been fundamental to Amazonian diets for 7,000 years was derived from an ancestral plant in this region.

Early Amazon inhabitants cleared small plots of ground in the forests and planted small trees with their manioc crops to preserve the forest's ecology. Fruit trees are common in the forest where visitors freely pick them. Peach palms which have many different uses are one of the sturdiest of the many trees that grow in the Amazon forest. They are much more productive than rice, beans or maize. They can produce fruit for up to seventy years. There is evidence that the peach palm was first cultivated in western Amazonia. The Indians domesticated the tree and its popularity spread rapidly across the Amazon and then north toward the Caribbean and Central America. Peach palms need very little maintenance by humans. When abandoned due to war or invasion, the peach palms grew heartily in the wild.

The early Indians transformed the Amazon River basin into something that benefited the people. Centuries of tweaking has changed the forest. Half of the species in the forest are edible foods for humans. In an untouched forest that figure is closer to 20 percent. Some experts believe that the Indians basically created the Amazon rainforest of modern times.

A large collection of terra preta, a rich soil developed in the Amazon, is at the mouth of the Tapajos suggesting that the area was heavily populated. Some estimate that as many as 400,000 people could have been supported by the terra preta. When the Indians were faced with an ecological problem, they fixed it. Rather than adapt to what nature offered, they changed it to suit their needs without destroying it; in fact, they made it better.

But then Columbus showed up, and it was downhill from there.

Analysis

Researchers and scientists cannot rely on the written word of Europeans who long ago wrote about what they found in the New World. They are aware that biases existed among the Europeans who came to the Americas – some out of curiosity, some to convert the “savages” and some to gain wealth.

Many scientists of today believe that the Indians left their mark on the environment. Researchers are forced to take into consideration the word of accounts written centuries ago by Europeans because there are few records that originated from the Indians themselves, they know that everything they read is not necessarily true.

Modern scientists aren't merely interested in how the Indians managed their environment but how that knowledge and expertise could be applied in today's world. There is evidence that the early Amazonians grew plants in what is now the rainforest but at the same time planted saplings of trees that they had cut down to clear for their plants. They knew instinctively that their soil would suffer if they destroyed all the trees,



a process that is advocated by today's conservationists. The scientists have to wonder what other wisdom they could share if that knowledge could just be tapped today.

Vocabulary

feckless, quixotic, calamitous, pullulating, vagaries, indigenous, tantamount, stratification, polemical, hinterlands, perfidy



Chapter 10: The Artificial Wilderness

Summary

Two-hundred million years ago Eurasia and the Americas comprised one huge continent which was called Pangaea. Eventually, it broke into pieces and formed roughly what are today's continents. This splitting apart virtually cut off all communication between the peoples of the new continents. When Columbus arrived in the New World he noted immediately that the trees, fruits and rocks were different than those in Europe.

Trade between the continents opened the people up to exotic foods and new resources. In the 1930s, the U.S. Civilian Conservation Corps planted millions of kuzu seedlings to help fight drought. The kuzu plant had been used in Japan to prevent erosion. People in the U.S. southeast were more than satisfied with the results; they even held kuzu festivals. After Columbus came and opened up the opportunities of the world to everyone, it was like a thousand kuzus around the globe. Some imports didn't work as well as kuzu. Peaches reproduced so quickly that some feared they would take over. Endive and spinach grew so large in South America that their fields were impassable and mint overwhelmed the Andean valleys.

When a species loses its natural predator an ecological release can occur. When cod were overfished in Maine, sea urchins multiplied and destroyed the kelp beds. The cod in this case was the keystone species – the one that impacts the survival and number of many other species. Until Columbus arrived, the Indians were a keystone species that dominated the hemisphere. They annually burned undergrowth, replanted forests, built canals and causeways and raised fields and were successful hunters and farmers. The Indians had been successfully managing their environment for thousands of years. Epidemics in the sixteenth century resulted in less attention to the environment and fewer men to manage it.

As the colonists moved west, they were preceded by epidemic disease and then ecological disaster. According to historian Stephen Pyne, the colonists invented the virgin forest. The wilderness created by the colonists was unfortunately built on top of Indian graves.

On a recent visit to Santarem in central Amazon, Mann observed forest paths that had become canals. People guided their boats around the trees. Houses and barns were built on stilts. Between communities, water traffic is steady and congested. People know shortcuts through narrow tunnels in the midst of the lush vegetation. There had been water highways in the forest long before Columbus arrived. U.S. and European environmentalists insist that the forest never be cut down or even used. It should remain just as it is. Village people do not agree because there are so many desperately poor people. They are all for saving the environment but their focus is on the poor. Their opponents respond that if the trees are cut down, the soil will be destroyed and ultimately everyone will suffer.



The debate between environmentalist and developer is an on-going one. In 1983, William Cronon, University of Wisconsin historian, presented the history of the New England landscape in his book, *Changes in the Land*. It was his conclusion that “wilderness” had not existed in the eastern United States for thousands of years. He was attacked by environmentalists which led to academic debate and finally to another book, *The Great New Wilderness Debate* which was edited by two philosophers who simply identified themselves as Euro-American men.

Native Americans managed the continent as much as possible to suit their needs. To be successful, modern nations must do the same. There is no returning the nation to what it was in 1491 because it would take recreating the world’s largest gardens. Gardens are man’s coordination with nature. Gardeners do not toil at trying to return nature into something that it was perceived to be before. They make gardens that provide beautiful flowers to enjoy or provide food for their families or to market.

Analysis

After the super-continent Pangaea broke apart and formed what is roughly the continents we have today, there was a natural lack of communication between the east and the west. There was no trade and no exchange of ideas. If the wheel was invented in Asia it had to be reinvented in South America.

When Columbus arrived in the New World in 1492, that all changed. The discovery of the New World by Columbus opened it up to the rest of the world. There were exotic plants and products that could be traded back and forth. Some were great successes in other parts of the world while some just were not meant for different environments.

The Indians of the Americas were considered to be the keystone species of their hemisphere. The keystone species is the species that most strongly impacts other species and their survival. The Indians had been carefully managing their environment for centuries. While the discovery of the Americas opened it up to trade and the exchange of ideas, it left the environment vulnerable because the Indians who were the keystone species and successful managers of the environment were ultimately supplanted by Europeans who had other ways of doing things.

Vocabulary

herbage, unsullied, nihilism, imbued, brouhaha, ecosystem, undulating, jargon, swathes

Chapter 11: The Great Law of Peace

Summary

A military alliance was formed between the Seneca, Cayuga, the Haudenosaunee and several other tribes and became one of the greatest states, known as the Five Nations, north of the Rio Grande in the two centuries before Columbus and the two centuries after his arrival. After making the transition from hunter-gatherer to farmer, populations grew among the tribes. Eventually inner conflicts led to fighting between the tribes. Deganawidah, the Peacemaker, emerged as a leader. So little is known about him that some feel he was merely a myth.

Most accounts claim he was not a member of the Five Nations but was born to a virgin girl in a village in the north. He had a message of peace but it was difficult to convey because he had a serious speech impediment. He connected with Ayenwatha, an Onondaga who was a great orator. They confronted Tododaho, the leader of the Onondaga, who killed Ayenwatha's three daughters. Ayenwatha dedicated himself to spreading Deganawidah's message of peace. He convinced the other tribes that they were stronger when they were united. Tododaho agreed to join the alliance as long as the main Onondaga village would be its headquarters. Tododaho became the voice of the alliance. Deganawidah developed the rules of operation for the Alliance in the Haudenosaunee constitution: The Great Law of Peace. Issues were presented before the Alliance. Decisions had to be unanimous.

The 117 codicils of the Great Law focused as much on establishing the limits of the council as much as granting them. The council could negotiate peace treaties but could not declare war. The sachems, or leaders, of the tribes made decisions about war. Compared to governments elsewhere in the world, the Haudenosaunee was a libertarian's ideal. It was also a feminist's dream because the individual clans were led by women. The decisions made by women on domestic issues could not be questioned. The Haudenosaunee tradition was established centuries before Europeans arrived. The alliance was an example of limited government and personal freedom. Some believe that the Great Law of Peace inspired the US Constitution. Naturally there is great debate about this suggestion but the Indians were a strong presence in the life of the colonists when the Constitution was conceived.

Indians were numerous in the north. The English, French and Dutch were intrigued by the Indians just as the Spaniards and Portuguese were fascinated by the Indians in South America. The great thinkers of the day from Europe were focused on the prospect of democracy and in changing society. The way the Indians were already living exemplified what these great minds were just thinking about. When Thomas More wrote Utopia in 1615, his story took place in the Americas. There are frequent references to the Indians in the writings of Montaigne, Locke, Voltaire, Jefferson, Franklin, Thomas Paine and others. During the early years of colonial America, the European and Indian societies intermingled much more than imagined. John Adams referred to the multiracial



society of his youth, relating how he visited a wigwam where he was treated with blackberries and apples. Eighteenth century New Hampshire was described as a mix of Indians and colonists. Benjamin Franklin negotiated a treaty with the Five Nations in 1744. The colonists and Indians were each impacted and influenced by the other. The Indians were referred to as free men by frontiersman Robert Rogers when he spoke before a British audience.

Others were less charitable to the Indians. French explorer Nicolas Perrot referred to the Indians as savages and unwilling to obey. The Jesuit Louis Hennepin wrote that the Indians were unwilling to learn and that the tribes were difficult to control. The Indians were astounded by the European practice of dividing people into social classes. Indians who visited France could not understand how the wealthy had everything while living in the same space as starving beggars. European colonists began to adopt the Indian belief that one man should not be subordinate to another, a trend that concerned the elite in France. Colonial governors could not become oppressive because of the examples set by the Indians who lived in the neighborhood.

The connection to the past and to the influence of the American Indians in both North and South America cannot be denied. They are part of the history of all the nations they touched and influenced. A person going back in time to meet a Haudenosaunee from 1491 might be surprised when he sees a lot of himself in the ancient man.

Analysis

The last chapter speculates about just how advanced the early Indians in the Americas may have been. The author concedes that every culture believes it is superior to others in some ways. Were they philosophically advanced of the Europeans? The author suggests that the example they displayed of their way of life may have actually inspired the U.S. Constitution.

Textbooks, stories and movies for decades have presented the Indians of the Americas as savages. The image everyone has come to think of them as matches how Allan Holmberg had described them in his book, *Nomads of the Longbow*, which was called *Holmberg's Mistake* by his critics. To Holmberg the Indians were frozen in time and had nothing to contribute toward the advancement of mankind.

The North American Indians believed that no man should be subordinate to another and that a decision made by a female clan member should never be questioned. This is not the image that most people are familiar with. The author makes the point that the Indians lived in close proximity to the colonists and that they influenced the Europeans as much as the Europeans influenced the Indians or perhaps even more so.

It is the author's contention that if a modern person could go back in time to meet one of the Indians of North America that he would be meeting himself.



Vocabulary

scion, servility, entrepreneurial, politics, impediment, promulgate, nascent, sachem, fissiparous, eponymous



Important People

Tisquantum

Tisquantum who was an interpreter for Massasoit, leader of an Indian alliance in New England who taught the colonists how to plant corn. He is credited with keeping them from starving. He moved in with the colonists and ultimately encountered Captain John Smith and his crew. Smith was apparently impressed with a tour of the settlement that Tisquantum gave him. Back in England, Smith drew a map of the territory and asked Prince Charles to assign English names to all the Indian settlements. Patuxet became Plymouth.

Smith left his lieutenant, Thomas Hunt, in charge while he was gone. A conflict developed between the crew and the Indians resulting in a bloody battle. Hunt kidnapped a number of Indians including Tisquantum. The tribe was outraged and vowed to no longer allow Europeans into their settlements. The Indians outnumbered the Europeans and proved to be worthy adversaries in the conflicts that continued to rage. When Tisquantum returned five years after his capture, everything had changed – Patuxet was Plymouth. The settlers had built their town on top of the Indian village.

After his capture, Tisquantum had a long trek back to his home, the first leg of which was to Newfoundland. He had to find a way back to Patuxet. Thomas Dermer, a member of John Smith's crew sent word for Ferdinando Gorges to send a ship with men and supplies that he could sail to New England. Edward Rowcraft commanded the ship but proved to be singularly incompetent. Dermer and Tisquantum sailed back to England but finally made passage to New England.

Tisquantum was astonished to find his settlement abandoned and blighted and the bleached bones of his people scattered about. They learned from Massasoit that the Europeans had brought a deadly disease to them – viral hepatitis A. Tisquantum returned to Maine with Dermer but later walked all the way back home. He found that another English expedition had killed several more of his fellowmen.

A schism between Massasoit and Tisquantum kept the latter en camp with the Brits. He had plans to take over Wampanoag leadership from Massasoit who placed a spy in the British camp to keep an eye on his enemy. Tisquantum tried to convince other members of the tribe that he could better protect them than Massasoit because he had the backing of the Brits. He told the Brits that Massasoit planned a siege against them urging them to attack first. The assault failed miserably due to lack of planning. Massasoit demanded that the Brits turn Tisquantum over to him for execution. When the Brits failed to comply, Massasoit sent a messenger with a knife and instructions for the Brits to cut off Tisquantum's head and hands. Tisquantum died of natural causes a short time later.



Pachakuti

Wiraqocha Inka was the leader of the Inka during the war with the Chanka in 1438. He fled with three of his four sons. Only Inka Yupanki remained behind and fought valiantly. When Wiraqocha Inka returned he ordered that Inka Yupanki be assassinated because he was gaining too much power. The plot failed and Wiraqocha Inka went into exile in defeat. Inka Yupanki renamed himself Pachakuti (world-shaker) and declared that the ruling Inka family was descended from the sun. True to his word, Inka Yupanki conquered what became the huge Inka empire. The tactics that the Inka used to capture new peoples and territory didn't necessarily involve brute force; often the general leading the conquest would offer the villagers valuables in exchange for allowing the Inka access to their settlements. Craftsmen and goods were routinely sent to Qosqo. The Inka would separate the populace into service, dividing households by sex and age and naming leaders of each group and subgroup.

Ultimately Pachakuti's grandson, who led a conquest in the 1490s, became more demanding of the people. The Chíncha elite of the coastal valley settlements always chose compliance over battle which led many to be appointed to important positions in the government. It was in 1463 that Pachakuti commanded that the entire empire be restructured in imperial style. As a result Pachakuti became one of history's greatest urban planners.

Pachakuti also restructured society by decreeing that all land and property belonged to the empire. Peasants were required to work for the state in whatever capacity they were skilled at. The empire paid all expenses of workers who were assigned to work away from home. Everything was accomplished in the Inka empire without money or markets. Economists have long held that a socialistic society will collapse without a free market. The Inka culture was able to eradicate hunger within the empire, an astonishing feat for any society. Immigrants brought in to work were encouraged to maintain their own code of dress; however, they had to speak the Ruma Suni language which would have created the homogenous society that Pachakuti dreamed of. But it wasn't given the chance. Pizarro the conqueror threw his dream asunder. Had he not interfered the Inka may have created monolithic society that may have endured the centuries.

Wayna, Washkar and Atawallpa

Thupa Inka Yupanki was the son and heir of Pachakuti Inka. After his death, he selected his second son, Wayna Qhapaq who became Inka. He was not a military leader and was satisfied with the success of his domestic work. Wayna marched an army south to his birthplace in southern Ecuador where he demanded that a place be erected for him. The locals fought against being conquered. Wayna was so dismayed by the defeat that he decided to lead another assault on the Ecuadorans. That attempt failed but finally the Inka realized victory in a third attempt.

Wayna was succeeded by his son Washkar who required his mother, Wayna's sister, who had never officially married Wayna, to marry the corpse of his father to make him a



legal heir to the throne. Later, Washkar married his sister. Civil unrest developed between Washkar forces and the supporters of Atawallpa, another son of Wayna who lived in Ecuador. The war lasted for over three years. Although Washkar won the first battle, Atawallpa struck back and defeated Washkar and beheaded his top general. Washkar led a retaliatory effort but was captured and returned to Qosqo where he was forced to watch his wives, children and relatives all executed.

In 1532, Atawallpa learned that small, pale and hairy people had landed on their shores. Francisco Pizarro convinced Atawallpa to meet with him in the plaza which was surrounded by empty buildings that had been evacuated. Hidden in these buildings were Pizarro's horses and cannons. Atawallpa was ambushed by Pizarro's army that rode toward him on horses – beasts that Atawallpa had never seen.

For his freedom, Atawallpa offered Pizarro a room 22X17 feet with gold and two rooms with silver. Pizarro agreed to the deal. Atawallpa ordered his men to recover all the gold and silver from the buildings and people. He also ordered that Washkar be executed along with all his relatives and supporters. Pizarro did not keep his end of the bargain and instead of being freed Atawallpa was garroted.

John Billington

The first person hanged in North American was John Billington who was actually a distant relative of author Charles C. Mann. He came to Plymouth on the Mayflower in November 1620. Billington was belligerent and profane and made many enemies. He was hanged in 1630 for shooting someone during an argument.

Henry F. Dobyns

In the 1960s, anthropologist Henry F. Dobyns was working on an aid project in rural Peru. A chapel in Lima reportedly contained the mummified body of Francisco Pizarro, the Spanish conquistador. Dobyns worked with Allan Holmberg. The researchers stayed on an estate that included an Indian village. The people were sharecroppers and conditions for them were horrific. Holmberg was developing a strategy to raise their wages.

Dobyns had conducted archival research for his doctorate on a similar project that began in 1953. When he discovered that the Indians began dying as soon as the Europeans showed up, it hit him "like a club right between the eyes." (68) Dobyns was intrigued by the chance to work with Holmberg in Peru which was considered one of the world's richest sources of mankind's societal evolution.

Dobyn's defined the area's importance which had been largely unknown because of Spanish desecration of Inka culture and misunderstood because of the Inka's tendency to describe their culture in hyperbolic terms. Their downfall was not described until 300 years after it occurred. And the Inka were ignored because most of South America was.



Developed nations tended to focus on their own colonies. No one had colonies in that continent.

Hernán Cortés

Hernán Cortés landed in what is now Veracruz in April 1519. His goal was to destroy the Triple Alliance. He quickly saw that the Alliance was not a unified entity and sensed that there was great discontent and bitterness among the conquered and oppressed. As his army marched inland, Cortés won every battle with his steel, horses and guns. Four small kingdoms offered to ally with Cortés if he would join Tlaxcala in bringing down the Triple Alliance.

They entered the main city of the Alliance, Tenochtitlan which dazzled the invaders. It was bigger than Paris! Cortés told the Spanish king that the city had everything imaginable. The leader Motecuhzoma was captured in his palace and made to be Cortés's puppet. It took seven months for the Mexica to retaliate during which time the King died.

The aggressive assault by the Mexica drove Cortés into retreat. Cortés and some of his soldiers escaped. Cortés convinced other states to join him and with a renewed army of 200,000 he once again led an invasion into Tenochtitlan. The battle was costly with over 100,000 casualties. The smallpox epidemic had struck the area and the Mexica lost a portion of its army to the disease. The Alliance was defeated in August 1521.

Francisco Pizarro

This Spanish explorer led the relatively small army that defeated the Inka. In fact, he had only 168 men and 62 horses. It was a miraculous victory given there were many thousands of Inka in the empire that was rich and successful. Pizarro defeated the Inka with "steel and horses" at least in part. The wooden weapons and longbows that the Inka had were no match for the steel weapons that Pizarro's soldiers wielded. Pizarro also used a form of "shock and awe." The Inka were startled by the large beasts that the soldiers rode on. They had never seen horses before. The largest land mammal in South America was the llama which was not nearly as big, strong or fast as horses. Pizarro also used crafty strategies including hiding his men and horses in abandoned buildings and ambushing the Inka. But Pizarro can't take all the credit for his victory. A plague had swept through the region and taken the lives of many Inka men who would have fought against the Spanish invasion.

Gaspar de Carvajal and Francisco de Orellana

The first written description of the Amazon was by Gaspar de Carvajal. It is an account that later proved to be filled with inaccuracies. Carvajal had accompanied Pizarro's brother Gonzalo in search of the golden city of El Dorado. Their journey was a disaster. They had no idea where to look for the city and got lost. Their horses died as did many



of the Indian laborers who accompanied them. They ran out of food and were starving. Carvajal and the second in command, Francisco de Orellana, were sent down the Napo River with an expedition and found themselves getting deeper and deeper into the jungle.

They discovered a village that they called Omagua where they found food and drink. Orellana didn't want to travel back upstream against the current and took the boat further downstream to the mouth of the river that emptied into the Atlantic. Carvajal decided to create a story that their departure wasn't treasonous that it had been forced on them. Six months later Gonzalo and the remaining members of his expedition stumbled into Quito in rags and ordered Orellana's arrest.

It took five months for the Orellana expedition to make it all the way down the Amazon. Starting off, they had no idea how long the river was. The crew suffered from illness and starvation. They were attacked from the banks by local Indians who shot poison darts at them. Orellana was hit in the eye with one poison missile and was blinded. Carvajal wrote about their struggles as part of his defense against being arrested. They were attacked by a large flotilla of Indians on canoes. The firearms the Spaniards had saved them from disaster.

Carvajal escaped imprisonment and became a priest in Lima. His description of the Amazon was not published until 1894. One of the main reasons his description of the Amazon wasn't taken seriously was the claim that the expedition was attacked by tall, topless women and that the region was densely populated. When these women wanted to reproduce, they captured men. Carvajal described the Amazon as being crowded which scientists largely rejected.

Massasoit

Massasoit, a Wampanoag, led an Indian delegation that met with the Europeans in the early colonial days of New England. He managed to convince the colonists to side with him against the enemy Narragansett by promising to let them stay on their land as long as they desired. It is believed that Massasoit's also presumed the Narragansett would not attack them because of the Wampanoag's close ties with the British.

Hernando De Soto

In May 30, 1539, Hernando De Soto arrived in Florida with his army where they remained for four years. He eventually moved on through the southwest and crossed the Mississippi over into what is now Arkansas. He was an explorer but also a businessman who became wealthy as a slave trader. His profits helped to fund the final defeat of the Inka. He had accompanied Pizarro to the Inka empire making his bones in brutality by the tortures he ordered.



Lagoa Sana People

Microbiologist Sérgio D. J. Pena worked with the blood of Indians in his lab in Belo Horizonte, Brazil and was attempting to solve a matter that puzzled scientists since 1840 when Danish botanist Peter Lund found 30 skeletons in caves north of Belo Horizonte. The caves were called the Lagoa Santa caves and the bones found within them were referred to as the Lagoa Santa people. The bones were from humans and from large animals. He boxed up his findings and sent them to a museum in Copenhagen for study. But no one even looked at them for more than 100 years. When they were finally studied, it was estimated that the bones were 15,000 years old, the oldest remains in the Western Hemisphere. Their characteristics were unlike those of modern local Indians. The conclusion was that they were some other kind of people.

Pena was unable to extract DNA from the bones. He decided to get samples of DNA from the Botocudo, an extinct tribe that wore the large wooden discs in their lower lips and earlobes. The Botocudo had deep set eyes and bulging brows distinguishing them from native Indians. Some scientists saw a similarity between the Botocudo and the Lagoa Santa people. Pena hoped to extract mitochondria DNA from the ancestors of men who had married Botocudo women. Female offspring from those unions would contain the same mitochondria DNA as female ancestors had centuries before.

Betty J. Meggers

Betty J. Meggers, a Smithsonian archaeologist, in her book *Amazonia*, believes that farmers in South America face limitations in what they can plant because of the soil's condition. They have reverted to "slash-and-burn" farming – they plant, get a few harvests then move on. These farmers, many of them Yanomamo, have not destroyed the forest with this process. The El Nino events that cause flooding, droughts and forest fires that occurred over the centuries also drove the farmers to use this technique. Swidden, vegetables produced by slash and burn, cannot sustain a complex society. Traditional farming would permanently destroy the forest soils while it takes the soil a hundred years to recover from slash and burn farming.

Meggers decided to visit the rainforest which is unusual expedition for an archeologist because the environment destroys wood, cloth and organic material – leaving little for anyone to dig up. Meggers noticed that the earliest traces of a society called Marajóara were elaborate. However, as the society endured through the years, their craftsmanship and artistry diminished. The Marajo were victims of El Nino and were defeated by an enemy. Meggers stressed that successful agriculture is crucial to a culture. Meggers's book was the result of more than 20 years of work. She came to support the concept of environmental limitation. Her findings are supported by conservationists who believe that trying to develop the rainforest destroys the rainforest and the developer.



The Olmec

In 1938 Matthew W. Stirling of the Smithsonian Institute discovered the existence of a people in the southern isthmus of Mexico that had never before known to the modern world. He and his team unearthed large six-foot tall statues of heads in the region and on a dry island in the coastal swamp in La Venta. He wondered how they transported the ten-ton heads from the mountains to the swamps. He concluded that these people were not Maya but another culture and named them the Olmec. These mysterious people were known as the mother of Mesoamerican culture. But in later times, other scientists did not consider the Olmec mysterious or the mother of Mesoamerican culture. There were other complex cultures that emerged in southern Mexico around the same time.

Mexica referred to another unrelated culture in Puebla as the mother culture which still existed at the time of the Spanish conquest. The first people of Stirling's Olmec civilization appeared around 1800 BCE. Initially there was little to distinguish them from other groups. However, there was a cultural quickening and within three centuries the Olmec developed and inhabited San Lorenzo, the first large settlement in North America. It was a large city where the elite lived; the commoners lived in farm villages surrounding it. Artwork contained repeated images of human fetuses, obese people and lepers.

The foreheads of babies born to the elite were affixed with flat boards that forced their skull to be longer and higher than normal. San Lorenzo collapsed around 1200 BCE, probably due to revolution or invasion. The Olmec society was not deterred by the fall of its largest city. Another city, La Venta, was under construction a short distance away. La Venta was destroyed around 350 BCE but it had left its mark. Its art and technical advancements spread to all parts of Mesoamerica.

Modern scientists have come to believe that the Olmec culture was not particularly unique; there were four regional power centers with the Olmec being only one of them. These groups engaged in trade and shared ideas and innovations. The Zapotec were neighbors of the Olmec and lived in nearby Oaxaca. By 1550 BCE they were transitioning from being hunter-gatherers to life in villages. Eventually, the area split into three chiefdoms that did not see eye to eye. Eventually unrest led to conflicts.

The Wampanoag

By all accounts, Wampanoag families were close and loving which kept the society strong. Education consisted of teaching the young men and women to be brave and honest. In sixteenth-century New England, the population growth was making agriculture a necessity and not an option. Archeologists and historians recognized the high level of interaction between tribes, including armed conflicts. Such battles were infrequent and brief; women and children were generally spared. The Wampanoag battles with rival tribes were not as savage as skirmishes between the English and Irish.

The Wampanoag felt safe in their settlement while the outside world presented more dangers.



Objects/Places

The Beni

Archaeologist Clark Erickson believes that the Indians of the Beni operated a sophisticated and expansive fishing industry and that they maintained and expanded grasslands by intentionally setting huge areas on fire. Currently in other regions north of the Beni, the manipulation of the land for specific purposes still enjoys widespread use. Ranchers and agrarians are eyeing the open and fertile lands of these regions. A new highway from the coast is bringing in new businesses. The local Indians do not want the Beni to become the poster child for a “return to nature.” They want to be in control of their own land and be able to continue their seasonal burnings, a process that is not supported by conservationists.

Nomads of the Longbow

Nomads of the Longbow was a book written by Allan R. Holmberg who had lived among the Siriono for several years and wrote about his experience. The book was immediately recognized as a legitimate and classic account of Indian life in the Americas. It was later found to have grave inaccuracies about the Siriono tribe presenting them as vapid savages and greatly underestimating their contributions to society.

The Pleistocene

The Bureau of American Ethnology sent William Henry Holmes to investigate bones that were referred to as Pleistocene Man. Amateur archaeologists had found numbers sites where these bones existed. Holmes concluded that the bones and fragments found by these enthusiasts much were more recent than they were claimed to be. Geologist W. J. McGee also debunked the theories put forth by the amateurs. Charles Abbott one of these weekend warriors was insulted by the findings of these scientists and accused them of conspiracy expressing his anger in a series of editorials.

The bones of an ancient bison were discovered near Folsom, New Mexico. Also discovered was a spear point near the bones. The animal existed thousands of years before. It followed that the human who launched the spear at the bison also lived a thousand years before. Jessee Figgins, head of the Colorado Museum of Natural History took the bones and spear points to Ales Hrdlicka, famed physical anthropologist who had rejected hundreds of bones presented to him as ancient. More bones with spear points were uncovered. The site was finally recognized as an important finding by many experts. But Hrdlicka never conceded that it was dispositive proof that humans inhabited the Americas during the Pleistocene.



Maize

Regardless of how it was developed, there is consensus that it was Indians, more than 6,000 years ago in southern Mexico, who had developed the unique crop. Mexican maize is red, blue, yellow, orange, black, pink, purple, white and multicolored. Maize has many uses. It can be popped, used as croutons, used for tortillas and used in a cold drink. More than 50 different varieties of maize have been identified in Mexico. Farmers plant maize in fields called milpas where other crops are also planted. Because of this crop diversity, the soil is maintained and does not become exhausted. There are farms in Mesoamerica that have been cultivated for thousands of years. The rest of the world could learn from the agrarian techniques innovated in Mesoamerica.

The paleo-Indians who developed maize had never seen a field of grain before and basically had to learn as they proceeded in a process that ultimately resulted in the development of a new species of grain. According to Michael D. Coe, Yale archaeologist, where maize was grown, high culture flourished. Ears of maize were often featured in works of art. Ears of maize were seen in the headdresses of kings. Maize and milpa fields spread throughout the Americas. By the time the Pilgrims arrived, there were fields of maize, beans and squash in New England. In the south, it had become a high-status food in Peru and Chile. After Columbus introduced it in Europe, it gained global status eventually becoming the daily bread in eastern Europe. Maize transformed agriculture in Africa.

The Cahokia Mound

In 1100 AD a four-level earthen mound that was bigger than the Pyramid at Giza could be seen from the Mississippi near the port of Cahokia. One-hundred twenty smaller mounds surrounded it. In the eighteenth century, Cahokia boasted the largest population north of the Rio Grande. The city was a beehive of activity. The mound was so enormous that it cast a shadow on the mountain at sunset. Some scientists thought the mounds were natural phenomena. Thomas Jefferson sliced a mound open and immediately said it was made by the Indians.

All that could be determined by archaeologists was that the mound belonged to a diverse, 4,000-year-old tradition. There were tens of thousands of mounds from Canada to the Gulf of Mexico. Modern construction has destroyed the majority of the mounds. The earliest mound was found in Louisiana and was believed to be 5,400 years old. The biggest was the size of a two-story building near the Ouachita River. There is no known purpose for the mounds. What it did suggest that these early Indians were not nomads.

Mutal

Some time before 561 AD, a ruler known as Sky Witness to the throne of the city of Kaan. Sky Witness persuaded a ruler in Mutal, a neighboring empire, to betray his masters. Both cities were part of the Maya civilization. Together they formed an army



and planned to attack from the north and from the south, squeezing Mutal between them. Sky Witness was determined to destroy Mutal. They chose the day of Venus's emergence in the morning sky as the day of attack. Sky Witness's attack on Mutal help set in motion the Maya collapse.

Mutal struggled for decades to rebound from their utter defeat. In 620 AD, Nuun Ujol Chaak was installed as king. He was determined to return Mutal to its old glory but Kaan was just as determined to prevent it. Civil war and internal conflicts had resulted in the Maya empire being separated into basically two blocs – Mutal and Kaan. Many cities were destroyed during the prolonged battle. B'ajlaj Chan K'awiil, the half brother of Nuun Ujol Chaak was a duplicitous man who schemed for power wherever he could find it. He set off a civil war between his supporters and those of his brother. When Tikal was conquered by Kaan, B'ajlaj changed sides and became a supporter of Kaan. Nuun plotted revenge on Kaan and on his brother and waged a bloody battle against them.

B'ajlaj disguised as the god Ik' Sip, stunned the enemy and defeated them. He killed his brother and took the throne of Mutal. Loyalists to the dead king placed Nuun's son onto the throne compelling Kaan to attack again. This time the army was defeated which began the domino effect that resulted in the collapse of the Maya civilization. After another century, Mutal vanished as well.

Terra Perta

According to Susanna Hecht, UCLA geographer, the Amazonia Indians created the ground they walked on. Researchers began studying what the farmers called terra preta do Indio – rich fertile Indian dark earth. Some farmers have used the same soil for years having to employ minimum fertilization. The papaya farmers have grown their crops on the land for twenty years. The soil has retained its nutrients for a thousand years. There has been no analysis of the landscape to understand the amount and distribution of the terra preta. It could represent 10-30% of the basin which is a few thousand square miles.

The terra preta contains more “plant available” nutrients than normal soil and absorbs and retains moisture at a higher level. It is not exhausted by continuous use when managed correctly. The key to its fertility is the high levels of charcoal that it contains. It also contains a hundred times more bacteria than other soil. Terra preta was originally created by “slash-and-char” which releases less carbon in the air than slash-and-burn. Indians of the region still conduct the same process in modern times.

More than 2,000 years ago, the central and lower Amazon experienced a culture shock. Arawak-speaking peoples migrated into the area from the south and west. By the time of Christ, there were some large established villages in the region. They came in two waves the first around 360 BCE when terra preta first began to form and then again in 1440 AD. The terra preta spread for the next several hundred years to Xingu in southern Brazil. Scientists found 19 large villages that were linked by a network of roads. There



were bridges, causeways, canals and other structures in the area along with thick deposits of the terra preta soil.

Qosqo

In the center of the Qosqo, the Inka capital city, was the plaza of Awkaypata that was surrounded by stately villas and temples. The stone blocks were so precise that one visitor remarked that a pin could not fit in between them. Splashes of gold used in construction played with the sun to create vivid light effects. To Pachakuti, the Inka emperor, Qosqo was the center of the universe. Four highways led out from the plaza. The empire known as the “Land of the Four Quarters” was aligned in heavenly order. A complex network depicting holy features of the landscape was also linked to the plaza. There is a surprising modern, austere quality to the art and architecture of the Inka structures that is unique to the empire. Their achievements in construction amazed their conquerors.

Dawnland

The New England coastline was called Dawnland – where the sun first rose each day. By 1000 BCE the area was ecologically rich and diverse. Using an advanced technique called glottochronology scientists can estimate the length of time two similar languages had separated from their common language ancestor. All indications are that the various Algonkian languages in New England date back to a few centuries before Christ.

The ancestral language may have roots in what is referred to as the Hopewell culture which faded out around 400 A.D. but its trade network remained intact for centuries. Nomadic hunter-gatherers borrowed agricultural knowledge from settlements in the Midwest. Agriculture was spreading and permanent villages were developing along the river valleys in New England. The coastal villages where Tisquantum lived were less structured but no less permanent. These peoples relocated only during the winter months and could not be considered nomads.

One of the communities referred to as quicksilver because it was constantly joining and splitting was Patuxet, aka Plymouth. Permanent structures called wetu were constructed to house the people and keep them warm and dry in cold temperatures and inclement weather. Indian women prepared meals from nokake, flour-like powder from dried maize, which was said to keep an Indian satisfied for days. Dawnland diets consisted of about 2,500 calories per day. Contrasting that with the many starving Europeans poses the question about which society was actually more advanced.

Genetic Bottleneck

A genetic bottleneck takes place when a population becomes so depleted that the people have no choice than to mate with relatives which can produce children with

serious mental and physical disabilities. Some tribes in the Americas were forced into this corner after so many of their members had been lost to disease and wars.



Themes

The Defeat of the Inka

The common response to the question as to why the Inka were defeated by the Spanish was comprised of two points: horses and steel. It was a misconception that the Inka didn't use the iron that was in great supply in the Peruvian empire. While the Europeans created items that optimized the metal's strength and hardness, the Peruvians preferred a malleable version of the ore created by hammering sheets and molding them into objects of art, gilded with a gold or silver finish. The Inka also used fibers and wood for other objects and needs. The most effective weapon use in the Inka armies was the sling that was made of cloth. To make them more deadly, the Inka sometimes heated up the stones that were launched with the slings. In May 1536, the Inka army used these hot missiles to burn the then Spanish-occupied Qosqo.

The horse was critical to Pizarro's ultimate victory. The largest animal in the Andes at the time was the llama which was too small to carry the weight of a man or the burden of heavy equipment. The Inka soldiers had to first get over their total stupefaction after first seeing the beasts. The speed of the horses was impossible to match for the Inka. The Inka had the advantage on their steep roads which were designed for the smaller sure-footed llama but they realized it too late. The Spanish soldiers had to dismount and coax their steeds down the treacherous slope. They were vulnerable at other times on the battlefield but the Inka failed to take advantage of those occasions. They did develop an effective weapon in the bola that was comprised of three stones tied together and aimed at charging horses.

Inka deification of their generals made it difficult for defeated or slain leaders to be replaced. A great plague of smallpox broke out in the Inka empire in 1524 causing the death of 200,000 including Wayna, an Inka leader, and many of his top generals and officers. The impact of deadly plagues has historically caused huge societal shifts in the history of mankind. Family lineages were important to Andean societies. Royal lineages were called panaqa. Royal mummies were considered to be alive because the Inka were immortal deities. Since Inka emperors were never dead, they retained their possessions forever. Smallpox took out a large number of the political elite fostering moves by each panaqa to vie for control which led to civil war.

The Inka Thupa Wallpa swore his allegiance to Pizarro in hopes of returning to Qosqo with him and ultimately overthrowing him and regaining power. But Thupa Wallpa died after a battle on the way back to the capital city. There was even more jockeying for position after his death. Anthropologist Henry Dobyns's conclusion was that the Inka were defeated by this factionalism, this inner fighting and by disease more than by steel and horses. Through the centuries, disease arrived before the first successful colonists in many instances. Disease left the nation weak and vulnerable and easy to conquer. Often a segment of the society sided with the invaders in hopes of improving its options.



Earthworks and Mounds

In 1977, the Smithsonian sponsored a complete archaeological survey of Amazonia. Alceu Ranzi a young medical science student was part of the expedition. Hundreds of large shapes that were three to nine hundred feet in diameter were discovered near Acre on the western side of Brazil. Ranzi was intrigued by the carvings but it took years for Ranzi to bring attention to them. Researchers finally began to show an interest. In 2005, Ranzi was co-leading a research team that would look into the images. Six years later, more than 200 of these geoglyphs, as they were dubbed, had been discovered. The researchers were certain that there were more to be found in the surrounding regions. The purpose of these images is unknown.

Creating just one of these geoglyphs, or earthworks, was estimated to take the movement of ten thousand cubic yards of earth. Without metal tool implements it would be all the more difficult. Experts believed that these carvings must have been created when the tree cover was not nearly as dense. The first known inhabitants of western Amazon carved a long series of these earthworks that stretched for seven-hundred miles of every terrain imaginable. These earthworks are a testament to the ingenuity of the Indians.

Most experts agree that the earthworks extend continuously between Acre and Beni. Some of the earthworks appear to be relatively recent, created perhaps only a few hundred years before Columbus arrived. The people simply vanished and no one knew anything about them. They had developed a successful process to manage the environment without ruining it. A papaya orchard was located a thousand miles up the Amazon and two hours from Manaus. The orchard was operated by descendants of Japanese immigrants. In 1994, archaeologists James B. Petersen and Michael Heckenberger led an expedition to conduct an exhaustive search the orchard.

There were ten low human-made mounds at the edge of the orchard. Carbon dating placed their origin in 1000 AD. After uncovering several corpses, the team concluded that the mounds were used for burials and that the region had a large population. It was estimated from the broken pottery protruding everywhere in the dig that one mound alone might contain up to forty million pieces of pottery. Extrapolating that figure out to craftsmen and consumers, population numbers become quite lofty.

Plague

That pandemics swept through the Americas is based on incomplete information. But those who support the theory believe that the diseases were particularly virulent in nature. Most diseases do not kill the majority of its victims. In the case of the Americas, Dobyns estimated a death rate of 95 percent. Large populations existing before epidemics were estimated based on that percentage. However, the lack of real numbers leads to the extrapolation of numbers. Census numbers taken at the time were not especially reliable. Some experts feel there is no support for these calculations made by



Dobyns and others. More archeological excavations will reveal further proof of population numbers.

The speed and scale compelled researchers to make high population estimates and for experts like Dobyns to conclude that the instances of diseases in the Americas were more deadly than in other locations. In 1967 a two-year old girl returning to her village in Brazil from a family vacation in Manaus came down with measles. No one in this village had ever come down with the disease. The virus spread quickly killing nineteen villagers; one out of ten people were lost. The huge number of fatalities was unprecedented which indicated that the Indians in their virgin-soil were more vulnerable to European diseases than virgin-soil Europeans would have been.

It appeared that Native Americans had particularly vulnerability to foreign viruses. In addition to the victims not having built up immunities to the virus, it was suspected that their immune systems were more restricted than those of Europeans. Additionally, because of the small numbers of Indians that first arrived in the Americas, they enjoyed genetic homogeneity and a limited gene pool which spared them from the development of conditions like cystic fibrosis, anemia and schizophrenia among other disorders. On the downside, antidotes had little impact on the genetically homogeneous Indians.

The human leukocyte antigens (HLAs) identify viral strains. The HLAs of the Indians may not have been genetically programmed to “spot” the deadly interlopers. According to Yale virologist Francis L. Black, American Indians have fewer HLA types than those who live on other continents. Their HLA profile is similar to that of indigenous Siberians. A deadly virus struck Siberia in 1768 leaving countless dead. Explorers observed the nearly abandoned villages on Kamchatka, a Russian province.

Professor Black believed that it would have been highly problematic for the Indians to fend off the disease and keep it from spreading. Staying isolated is a way to avoid epidemic as is marrying and procreating with a member of another group that has more natural immunities. Duke University historian Elizabeth Fenn gathered evidence that indicates the Western Hemisphere was struck by two smallpox pandemics just before and during the Revolutionary War. The disease spread from Boston to Georgia mercilessly attacking the Cherokee nation. The rebels also were impacted by the epidemic but not as severely as were the Indians.

During the epidemic, the Hopi Indians were hit particularly hard. When the Spanish governor tried to convince tribe members to live in missions, he was told that the tribe would soon be wiped out. The breadth of the virus was stunning reaching from Mexico all across the Plains to the Hudson Bay taking many lives and destroying families in its relentless march. A Blackfoot tribe attacked a Shoshone camp only to find nothing but dead bodies inside the tents. Unlike Europeans who established strict quarantines, Indians were known to sit by the bedside of a loved one suffering from the disease. Six Cree tribes literally disappeared after the pandemic. The Omaha launched what they knew to be a suicide attack against a disease-ridden enemy.



The First Indians in the Americas?

In 1929, large bones were discovered by Ridgely Whiteman near Clovis, New Mexico. The Smithsonian dispatched paleontologist Charles Gilmore to evaluate them. Gilmore found no interest in them and went back to Washington. Whiteman was undeterred. He contacted Edgar B. Howard, a graduate student at the University of Pennsylvania. After visiting the site, Howard advised his supervisors that there was an extensive bone deposit of bison, horse and mammoth. After scrapping away geological layers, it was concluded that not one but two ancient societies had lived on the site. The older sight at the bottom of the dig became known as the Clovis culture.

Howard arranged for the Academy of Natural Science in Philadelphia to hold a symposium on Early Man. The symposium was attended by hundreds of scientists from all over the world, most of whom accepted the antiquity of the Clovis culture. A reproduction of the site was shown at the symposium. The guest speaker was respected anthropologist Ales Hrdlicka who scoffed at all the recent discoveries of Indian bones. He avoided speaking about the Clovis culture. Following the Clovis discovery, scores of similar sites were found around the Americas. Clovis was probably inhabited 15,00-20,000 years ago. Definitive answers were available after Willard Libby invented carbon dating in the 1950s. He determined that the Clovis culture dated back between 13,500 and 12,900 years ago. That time frame presented the only opportunity for a migration to take place from Siberia to North America by crossing the frozen glaciers in a region called Beringia.

Over the centuries after accessing North America, the people migrated southward. The implication was that all Indian societies descended from Clovis, a theory that was largely embraced by the scientific world. The large animals that existed in the Pleistocene – like the mammoth, turtles that weighed as much as car, saber toothed cats, armadillos the size of armchairs and giant sloths that could reach branches 20 feet above them – all disappeared. Some experts believed it was due to overkill while others believed it was due to an abrupt climate change.

Author Charles Mann was asked to write the story about a dispute between Indians and the State of Washington over salmon fishing. Archeologists had raised the dander of the local Native Americans. An Indian named Denny explained that his people were disturbed by the work of Ales Hrdlicka and detested the overkill hypothesis. Hrdlicka had exhumed the bodies of thousands of Indians without permission or regard for the dead or for their living descendants. The Indians felt the archeologists who supported the overkill theory invaded their territory to prove it and make the white people feel better about themselves. The supposedly objective scientific world preferred to think of the paleo-Indians as savages who killed the huge land creatures and drove them to extinction. Some experts like Vine Deloria, Jr., a Colorado political scientist, threw water on the entire Clovis paleo-Indian theory. Many scientists also question the plausibility of the migration of the Clovis Indians from Serbia and the overkill theory.



In the same year that the Clovis model was presented, archaeologist Alex D. Krieger listed 50 sites that he claimed were older than Clovis. A controversy erupted after the 1986 publication of an article in *Current Anthropology*. The article was co-written by a linguist, a physical anthropologist and a geneticist. The linguist's portion of the article drew the most attention. Scientists had always been puzzled about the many Indian languages; California alone had 86 Indian tongues. Across the nation, there were 1,200 diverse languages. Joseph H. Greenberg, the linguist who contributed to the article, believed that the many languages fell into just three linguistic categories: Aleut, NaDené and Amerind. It was his conclusion that these three categories represented three separate migrations over Beringia. Clovis was first but first of three.

In 2001, geneticist Rebecca L. Cann concluded that one thing was certain – the Clovis model was unsupported. Cann based her beliefs on the work done by archaeologists Tom Dillehay of the University of Kentucky and Mario Pino of the University of Chile. Their excavation project in Monte Verde, Chile, began in 1977 and concluded in 1985. They determined that paleo-Indians inhabited the area 12,800 years ago and found evidence of human existence more than 32,000 years ago. Not surprisingly, there was great push-back and criticism over their findings. In the midst of this debate, the controversy about Clovis raged on. Dillehay and Pino fought back by issuing more evidence to support their findings. In 2011, scientists using the optically stimulated luminescence process discovered a site in Texas with artifacts that pre-dated Clovis.

Indian Populations Prior to 1492

The population of Indians prior to the arrival of the Europeans is always a question for historians. There is little agreement on that number. James Mooney, a respected ethnographer at the Smithsonian, estimated that in 1491 North America had a population of 1.15 million. Another expert believed that as many as 8.4 million Indians lived in the entire hemisphere. Other experts believed that the population of the central Mexican plateau was 25.2 million alone. Dobyns believed that there were between 90 and 112 million people in the Americas in 1491. If that were the case, there were more people in the Americas than in Europe at the time. Dobyns's numbers were met with much skepticism and even outrage from both sides of the spectrum.

While Hernán Cortés was responsible for the carnage in the capital city, there was a larger catastrophe for which blame was difficult to assign. The population dropped from 25.2 million people in Central Mexico when Cortés first arrived to 730,000 in 1620-25. Mexico did not recover its population until the late 1960s. Many Europeans recognized their responsibility in destroying so many kingdoms and slaying so many people. Some experts have used the term "holocaust" to describe their invasion. Defenders of the Spanish dismiss any notion of genocide. Writer Steven Katz theorized that the murders were unintended – that the Europeans wanted to keep the Indians alive. However, their motives did not stem from a humane sensibility; they wanted the Indians kept alive as a source of labor. Spain experienced an economic downturn because of the loss of the Indians. The Spaniards began importing African slaves to solve their labor problem.



The animosity that the Europeans held for the Indians was indisputable. Poet-physician Oliver Wendell Holmes, Sr. said they should be exterminated. Indians were tortured and killed. Diseases were spread in the villages intentionally. But all that amounted to a pittance when compared to the naturally spread diseases that ravished the population. Some progressives believe that the Europeans knew enough about infectious disease from their own experiences with it to have enabled them to more effectively deal with it in the New World. But those critics failed to take into consideration the deeply held beliefs by both Indian and European that the plagues reflected the will of the gods. The Spanish elite questioned whether the conversions they made were worth the human toll. As far as blame for the epidemics, the Europeans were responsible for introducing the microbes into the Americas but not guilty of genocide.

In his *Apologetica Historia Sumaria* written in the 1530s, Bartolomé de Las Casas calculated that after the first 50 years after Columbus, his countrymen were responsible for the death of 12 million men, women and children. Later he raised the number to 40 million. No expert can say with any certainty what the population of the Americas was prior to 1492.

Styles

Structure

The book 1491 by Charles C. Mann is separated into three main parts. Following the first chapter, A View from Above is Part One: Numbers from Nowhere? The chapters in this part tell of the early North American Indians and their relationship with colonists from Europe. It also discusses the controversy about the Indian population before Columbus. And it covers the story of Francisco Pizarro's conquest of the Inka and the reasons for the defeat of Indian civilizations that had endured for centuries.

Part Two: Very Old Bones discusses the debate over whether the Americas were possibly inhabited by humans in the Pleistocene Age. It also covers the development of successful crops by the Indians including cotton and maize and advancements in mathematics, writing systems and other innovations.

Part Three: Landscape with Figures covers the Amazon rainforest and how scientists are beginning to believe that the rainforest wasn't a gift from nature; rather, it was a creation of the Amazon Indians who developed strategies on how to make the woodlands benefit their people.

In the final chapter, the prospect that the U.S. Constitution may have been inspired by the tenets of North American Indians is presented in a thought-provoking conclusion.

There are maps of the areas discussed along with photos and graphics of relics found and the places in which they were discovered. There are a number of appendices following the final section along with acknowledgements and resources used in the research for the book.

Perspective

The book 1491 by Charles C. Mann is written in the first person. Author Mann is a reporter and correspondent for a number of publications including The Atlantic, Science and Wired. He has also written articles for among others Fortune, The New York Times, Smithsonian and HBO. He won the National Academies Communication Award for 1491 as best book of the year. Mann has authored other non-fiction books including Noah's Choice: The Future of Endangered Species and the Second Creation: Makes of the Revolution in Twentieth-Century Physics to name a few.

Mann's field of interest is non-fiction and as a reporter his account of the many scientific findings that are included in this book include opinions from all sides of the debate. Since there is much speculation and there are many unknowns about the paleo-Indians who inhabited the Americas before 1492, there is much controversy and robust debate about what is true, what is not true and what is not provable. Mann taps the best minds in the field of archaeology and other scientific disciplines for their opinions and provides



the reaction of those who first encountered the Americas, including Columbus when he first stepped ashore.

Mann has not only written about the Americas in 1491, he has also accompanied archaeologists, anthropologists and other scientists on expeditions to observe firsthand the terrain and landscape that the early Indians were part of. He also enjoyed the opportunity to be present when the artifacts of antiquity were unearthed during these expeditions.

Tone

Since author Charles C. Mann is a correspondent and writes many articles for a variety of publications, he is trained to provide the facts without opinion. However, he does rely on the observations he himself made while on an archaeological expedition to Bolivia in South America. As a reporter, Mann provides both sides of the many controversial issues surrounding the paleo-Indians of the Americas: where did they originate from, how long have they lived in the Americas and what impact did they have on their environment?

Mann provides the old-school thought, the conventional wisdom that taught school children that Indians were violent non-productive savages who contributed nothing to the world or to the advancement of man. Mann follows those arguments up with the current thinking that the Indians were in the Americas much longer than previously believed, that there may have been three waves of migration of these people from Asia and that they contributed much more to mankind than originally thought.

By providing both sides of the argument, Mann lays the disagreements and controversial subjects out on the table. There is more than a hint that he may possess a bit of bias and tends to agree with the more modern thinking because he often presents that side last. Without fail he provides the words of experts and scientific findings that support all opinions.

Mann pointed out that he used the term "Indians" throughout his work even though the term is no longer considered acceptable because it helped with the pace of writing and reading the complex material.

Quotes

Indians were here far longer than previously thought, these researchers believe, and in much greater numbers. And they were so successful at imposing their will on the landscape that in 1492 Columbus set foot in a hemisphere thoroughly marked by humankind.

-- Author (chapter 1 paragraph 5)

Importance: The population of the Indians prior to 1492 is one of the questions posed by the book. It is the contention of modern scientists that the Americas were much more populous than they were formerly believed to be.

Before Columbus, Holmberg believed, both the people and the land had no real history. Stated so baldly, this notion – that the indigenous peoples of the Americas floated changelessly through the millennia until 1492, -- may seem ludicrous. But flaws in perspective often appear obvious only after they are pointed out. In this case they took decades to rectify.”

-- Author (chapter 1 paragraph 23)

Importance: The author is referring to Holmberg’s Mistake. Allan Holmberg was a grad student who spent years studying the Sirionó Indians and the Beni. His depiction of the region as backward and isolated was ultimately proven to be inaccurate although it took decades to disprove it.

If imperial potential is judged in terms of environmental adaptability, the Inka were the most impressive empire builders of their day.”

-- Filipe Fernandez-Armesto (chapter 3 paragraph 10)

Importance: Oxford historian Filipe Fernandez-Armesto described the Inka culture and their advanced processes that enabled them to have the largest empire on earth and one in which processes had to be developed to deal successfully with every terrain imaginable – from rainforest to desert.

One of George Washington’s most brilliant moves was to inoculate the army against smallpox during the Valley Forge winter of ’78.’ Without inoculation, she said, the smallpox epidemic could easily have handed the colonies back to the British.”

-- Elizabeth Fenn/Author (chapter 4 paragraph 41)

Importance: This statement by Duke University historian Elizabeth Fenn illustrates the impact that disease has on events. It literally can change history. There was a smallpox pandemic raging at the time taking many lives.

Very probably the greatest demographic disaster in history, the depopulation of the New World, for all its terror and death was largely an unintended tragedy.”

-- Steven Katz (chapter 4 paragraph 102)



Importance: In his book, *Holocaust in Historical Content*, writer Steven Katz describes the population decline in the Americas in harsh and ironic terms – the mass murders of millions may have been unintended.

The complexity of a society's technology has little to do with its level of social complexity – something that we, in our era of rapidly changing, seemingly overwhelming technology, have trouble grasping. Every society, big or little, misses out on 'obvious' technologies."

-- Author (chapter 7 paragraph 61)

Importance: The author provides a general explanation why the Olmec didn't utilize the wheel, which they had invented for toys, for more important purposes like transportation and grinding mills. Mesoamerica where the Olmecs lived was isolated from other advanced cultures that may have enlightened them about the uses for the wheel.

... all states can be parceled into four types: pluralist, in which the state is seen by its people as having moral legitimacy; populist, in which government is viewed as an expression of the people's will; 'great beast,' in which the rulers' power depends on using force to keep the populace cowed; and 'great fraud,' in which the elite uses smoke and mirrors to convince the people of its inherent authority. Every state is a mix of all of these elements but in Tinwanaku, the proportion of 'great fraud' may have been especially high."

-- Author (chapter 7 paragraph 75)

Importance: The author explains the different types of state run governments. The Tinwanaku of Mesoamerica were a blend of all four with a thumb on the scale in favor of "great fraud."

Belt set down what has become the classic image of the tropical forest: a gigantic, teeming expanse, wildly diverse biologically but otherwise undifferentiated. 'A ceaseless round of ever-active life weaves the forest scenery of the tropics into one monotonous whole.'"

-- Thomas Belt (chapter 9 paragraph 21)

Importance: Nineteenth century naturalist Thomas Belt describes the Amazon rainforest in the classic terms that conservationists want to think of in. However, modern scientists believe that the Indians had left more than a footprint in the forest and managed the environment to benefit their people.

The level to which a culture can develop is dependent upon the agricultural potentiality of the environment it occupies."

-- Betty Meggers (chapter 9 paragraph 37)

Importance: Smithsonian archaeologist Betty Meggers stressed the importance of fertile soil. Without it, a culture is doomed to failure.



For millions of years, the separate fragments of Pangaea had almost no communication. Evolution set their species spinning off on separate trajectories, and the flora and fauna of each land diverged so far from each other that the astounded Columbus remarked that ‘all the trees were as different from ours as day from night, and so the fruits, the herbage, the rocks, and all things.’”

-- Author (chapter 10 paragraph 1)

Importance: The author explains why there are different species on different continents in part by using Columbus’s reaction to the species he, an European, found in the Americas.

In ecological release, an organism escapes its home and parachutes into an ecosystem that has never encountered it before. The majority of such escapees die rapidly, unable to thrive or reproduce in novel surroundings. Most of the survivors find a quiet niche and settle in, blending inconspicuously with the locals. But a few, finding themselves in places with few or none of their natural enemies, look around with the hopeful incredulity of juvenile delinquents who discover the malls’ security cameras are broken – and wreak havoc.”

-- Author (chapter 10 paragraph 4)

Importance: The author describes what can happen when the species from one environment is transplanted to another. Sometimes it feels at home and takes route, sometimes it doesn’t thrive and at other times it may damage its new environment.

... the Indians of the eastern seaboard institutionalized their liberty to an unusual extent... Important historically, these were the free people encountered by France and Britain – personifications of democratic self-government so vivid that some historians and activists have argued that the Great Law of Peace directly inspired the U.S. Constitution.”

-- Author (chapter 11 paragraph 13)

Importance: It is the contention of some historians and scholars that the Great Law of Peace, a set of laws that North American Indians lived by, inspired the U.S. Constitution because of the close proximity in which the Indians and colonists lived.



Topics for Discussion

1

What is an interaction sphere? Provide an example from Mesoamerica and an example from Europe.

2

Describe what “slash-and-burn” agriculture is. How is it different from “slash-and-char” agriculture? Which process better protects the environment?

3

What do scientists and researchers mean when they say that the present-day Amazon rainforest was created by man? What do they base their conclusions on?

4

Explain the diverse positions of the environmentalist and the developer relative to the future of the rainforest. What do the terms “nomos” and “physis” mean?

5

How did Pizarro defeat the Inka? When the Spaniard conquistadors were first seen by the Inka, what were they shocked about?

6

What was the importance of maize in the Americas? How was it developed and what other produce or crops can it be compared to?

7

How did the Mexica priests react when confronted by visiting European priests about Christianity? What warning did the European priests give the Mexica religious leaders about their beliefs?



8

What animals did De Soto introduce into the Americas and what were the ramifications? What animals did the Native Americans domesticate?

9

Why do many experts not ascribe to the theory that the Maya starved suffered from dehydration? What theories were advanced to explain the Maya's abandonment of their cities?

10

What is a keystone species? Describe what happened with cod disappeared from the Bay of Maine.