APUSH

2019 Summer Assignment

Mr. Gerrish

A309

david.gerrish@sno.wednet.edu

Welcome to AP US History!

APUSH is designed to be the equivalent of a two semester introductory college US History course. The course focuses on helping students acquire the factual knowledge and analytical thinking skills necessary to deal critically with issues of interpretation in United States History.

Summer Assignment

This year's summer assignment is about debunking myths and stereotypes.

It is made up of an interview with and 3 selections by the author of the book *1491*, Charles C Mann.

As the title implies, the book, published in 2005, is a look at life in the Americas on the eve of the arrival of Europeans. The book seeks to dispel what it considers a terrible misunderstanding in the mainstream culture of what life was like before the arrival of Columbus - a misunderstanding both in terms of the environment and the people who lived here.

For years, America before Columbus was portrayed as a "garden of Eden" – lands that were in a "natural" state, unimproved or unchanged by the hand of man. In addition, the new world was seen as largely unpopulated, with natives in small scattered settlements with little organization, structure, or commerce.

1491 summarizes scholarship that calls both these ideas into question. Mann writes of an America in which large numbers of Indians, some in great cities, acted in powerful ways to shape their natural world. The land the Europeans encountered was not pristine untouched nature, but rather a world shaped by human hands and ingenuity.

Begin with the brief interview of Mann. Then read the excerpt from 1491. Then read of Jamestown and Plymouth, the first two lasting English colonies.

Answer the questions in complete sentences. Explain your answers. Use specific details and cite the article where appropriate. Answer on the sheets provided. Email me with any questions.

All questions are due on the first day back to school.

Happy Reading!

Name_____

"The Pristine Myth"

An Interview with Charles C. Mann by Katie Bacon

Intro

1. What was the "standard" view of North America before Columbus?

_____
_____
_____
_____
_____
_____

2. What alternate view do a growing number of anthropologists now believe?

_____
_____
_____
_____
_____
_____

3. Describe the primary sources Mann cites as evidence of this alternate view.

_____
_____
_____
_____
_____
_____

4. Although the debate over the number of Indians before Columbus "will never be settles", how does Mann suggest we need to change our thinking about Pre-Columbian North America?

_____
_____
_____
_____
_____
_____

Interview

1. Define “polemical”

_____
_____
_____
_____
_____
_____

2. Explain the reasons Mann believes there is so much emotion in the debate over pre- Columbian cultures.

_____
_____
_____
_____
_____
_____

3. In his example about the Beni, how does Mann illustrate that personal experience and worldview influence our views of the past?

_____
_____
_____
_____
_____
_____

4. What are the implications for the environmental movement if “there really has been very little untouched nature for 10,000 years”?

_____
_____
_____
_____
_____
_____

5. What are the two “general types of environmental goals” Mann talks about? Give examples. How could the state of things in 1491 affect the second of these goals?

_____
_____
_____
_____
_____
_____

Name_____

1491

2002 Excerpt from the Atlantic

Intro

1. What is the Beni province of Bolivia like?

_____
_____
_____
_____
_____
_____

2. Use the internet to look up images of the Beni and the mounds Erickson sees as the product of human hands. Describe your reactions.

_____
_____
_____
_____
_____
_____

3. What was Mann and his children taught about America before Columbus? How do the ideas of people like Erickson and Balee differ?

_____
_____
_____
_____
_____
_____

4. What is the question Mann asks Balee? Why does Balee see the question as a "trap"?

_____
_____
_____
_____
_____
_____

5. What were you taught at various grade levels about life in America before Columbus?

_____
_____
_____
_____
_____
_____

“Like a Club between the Eyes”

1. Who was James Mooney? Who was Henry Dobyns and how did his research lead him to upend the conventional wisdom?

2. Describe the waves of epidemics that ravished the continent, including the Puget sound region.

3. Look up small pox and typhus and describe some of the effects of the diseases.

4. Why were Dobyns ideas so angrily attacked?

5. Explain how history can be so important to current political debate.

“Inventing By the Millions”

1. What was DeSoto’s expedition’s purpose in 1539? What did he note about the prevalence of people and towns?

2. How had the scene changed by the time of LaSalle’s expedition in 1682?

3. Why do some blame pigs for the changes? Could disease have been responsible?

4. What do some “high counters” think of “low counters” motives? What do “low counters” think of “high counters” numbers?

5. No matter the exact number, what does Elizabeth Fenn think is the “central fact” and the “consequential finding” of this new way of thinking?

“Buffalo Farm”

1. Google “Cahokia”. Describe Cahokia.

2. What were European / American reactions to and interpretations of the mounds at Cahokia through the 1980s? How was the new world described in textbooks pre- 1990s?

3. According to Crosby, what were the two “centers of learning” in human history? How did they differ? What were the strengths of each area?

4. What facts could be used to argue that “the western hemisphere was better off than Europe? What were some Indians reactions to Europeans “superiority”?

5. What was the purpose and result of Indians burning forests?

“Green Prisons”

1. Why are some visitors disappointed when they first see the Amazon?

_____
_____
_____
_____
_____
_____

2. What were the conclusions and implications of Betty Meggars bok “Amazonia” and her work excavating the island of Marajo?

_____
_____
_____
_____
_____
_____

3. What is Anna Roosevelt’s conflicting theory about the civilization on Marajo? Describe Meggar’s response to Roosevelt’s new ideas.

_____
_____
_____
_____
_____
_____

4. Explain the “terra preta” process that some think Indians used to terraform large parts of the Amazon.

_____
_____
_____
_____
_____
_____

5. What fear does Meggars and others have of the possible “misuse” of the terra preta hypothesis? Is the Amazon a wilderness? What should be its future?

_____
_____
_____
_____
_____
_____

“Novel Shores”

1. What differences are there in DeSoto’s and later French explorers’ descriptions of the American bison?

2. What is a “keystone species”? How did Indians, acting as a keystone species, affect the bison?

3. Why did passenger pigeons also experience “outbreak populations”?

4. Explain and evaluate the argument that European settlers inadvertently *created* pristine forests.

5. What are the implications of trying to return the landscape to its 1491 state?

Name_____

"America, Found and Lost"

National Geographic May 2007

1. What was the financial significance of John Rolfe importing *Nicotiana rustica* seeds to Jamestown?

_____
_____
_____
_____
_____
_____

2. What was the ecological significance?

_____
_____
_____
_____
_____
_____

3. What effect do earthworms have on forests?

_____
_____
_____
_____
_____
_____

4. Why does the author claim the Columbian Exchange is "arguably the most important event in the history of life since the death of the dinosaurs"? Do you agree?

_____
_____
_____
_____
_____
_____

5. What "facts" about the New World does the author argue are incorrect?

_____
_____
_____
_____
_____
_____

6. Describe the land and people of Tsenacomoco. Why were there no fences?

7. What was the hope of the Spanish and then the English settlers for the New Worlds?

8. What were the reasons Jamestown was built where it was? Was it a good location?

9. Describe Jamestown's early struggles and the "starving time".

10. Why didn't Powhatan attack? Why didn't the colonists leave?

11. What things are known and what things are unknow in the Smith/Pocahontas/Rolfe story?

12. Explain the three factors of “ecological imperialism” brought by Europeans and how each impacted the environment: tobacco, honeybees and domestic animals.

13. Why does the author continually call the Europeans tassantassas?

14. Why didn't Opechancanough do more to fight back?

_____
_____
_____
_____
_____
_____

15. Explain the meaning of the title of the article.

_____
_____
_____
_____
_____
_____

Name_____

"Native Intelligence"

Smithsonian December 2005

1. Who was Massasoit? What difficult political problems did he face?

_____
_____
_____
_____
_____
_____

2. How and why did the Wampanoag go from "middlemen" to allies of the English settlers?

_____
_____
_____
_____
_____
_____

3. Compare and contrast the natives to the Pilgrims. What advantages and disadvantages did each side have?

_____
_____
_____
_____
_____
_____

"Friendly Indian"

4. Describe the pre-1970 views of native Americans in New England.

_____
_____
_____
_____
_____
_____

"The Dawnland"

5. Who was Tisquantum?

_____
_____
_____

6. Describe the Dawnland. Why was it called a “quicksilver” community?

_____
_____
_____

“Sweet, toothsome, and hearty”

7. Despite some older textbook accounts, describe how life in the Wampanoag confederation was in many ways superior to European life?

_____
_____
_____
_____
_____
_____

8. Describe the government of and relation between tribal groups.

_____
_____
_____
_____
_____
_____

“Beautiful of stature and build”

9. What were Europeans and Indians first impressions of each other?

_____
_____
_____
_____
_____
_____

“A Small ship”

10. What did almost all early European visitors report about the coastal lands of New England?

_____
_____
_____
_____
_____
_____

11. What did Thomas Hunt do to inflame relations?

_____
_____
_____
_____
_____
_____

12. What was the reaction of the Wampanoag and Nauset to Hunt's actions?

_____
_____
_____
_____
_____
_____

"God's Good Providence"

13. How did the Pilgrims intend to survive? How prepared were they? How did they actually survive?

_____
_____
_____
_____
_____
_____

14. How did Tisquantum lean English? Describe his round-trip voyage to Europe.

_____
_____
_____
_____
_____
_____

"Europeans' Secret Weapon"

15. What had changed in New England upon Tisquantum's return? What had happened?

_____
_____
_____
_____
_____
_____

16. What political crisis did the epidemic create for Massasoit?

_____
_____
_____
_____
_____
_____

17. How did Massasoit attempt to deal with the crisis?

_____
_____
_____
_____
_____
_____

"First Thanksgiving"

18. What "dangerous game" was Tisquantum playing? How did it backfire?

_____
_____
_____
_____
_____
_____

19. Should Bradford have handed Tisquantum over to Massasoit? Why or why not?

20. Explain the title of the article.

The Pristine Myth

Charles C. Mann, the author of "1491," talks about the thriving and sophisticated Indian landscape of the pre-Columbus Americas

Katie Bacon *The Atlantic* March 2002

For years the standard view of North America before Columbus's arrival was as a vast, grassy expanse teeming with game and all but empty of people. Those who did live here were nomads who left few marks on the land. South America, too, or at least the Amazon rain forest, was thought of as almost an untouched Eden, now suffering from modern depredations. But a growing number of anthropologists and archaeologists now believe that this picture is almost completely false. According to this school of thought, the Western Hemisphere before Columbus's arrival was well-populated and dotted with impressive cities and towns—one scholar estimated that it held ninety to 112 million people, more than lived in Europe at the time—and Indians had transformed vast swaths of landscape to meet their agricultural needs. They used fire to create the Midwestern prairie, perfect for herds of buffalo. They also cultivated at least part of the rain forest, living on crops of fruits and nuts. Charles C. Mann, in "1491"(March *Atlantic*), surveys the contentious debate over what the Americas were like before Columbus arrived—a debate that has important ramifications for how we manage the "wilderness" we still have left, if indeed it really is wilderness, untouched by the hand of man.

If it is true that the pre-Columbus Americas had tens of millions of people and highly developed civilizations, what happened? Why were there so few traces when the conquistadors and the colonists began to arrive in earnest? One demographer has estimated, according to Mann, that "in the first 130 years of contact about 95 percent of the people in the Americas died—the worst demographic calamity in recorded history." Others think this number is too high. But what is clear from oral history accounts is that Europeans who arrived early on found busy, thriving societies. When John Smith visited Massachusetts in 1614, he wrote that the land was "so planted with Gardens and Corne fields, and so well inhabited with a goodly, strong and well proportioned people ... [that] I would rather live here than any where." But by the time the colonists reached Plymouth in the *Mayflower* six years later, they found one deserted village after another—the Indians had been felled by European diseases to which they had little resistance. Mann writes,

All through the coastal forest the Indians had "died on heapes, as they lay in their houses," the English trader Thomas Morton noted. "And the bones and skulls upon the severall places of their habitations made such a spectacle" that to Morton the Massachusetts woods seemed to be "a new found Golgotha"—the hill of executions in Roman Jerusalem.

The debate over how many Indians lived in the Americas will perhaps never be settled—there is too little archaeological evidence, and too many variables required to calculate their population. Mann makes clear, though, that the contributions of these civilizations were myriad—from corn to tomatoes to ways of sustainably managing land—and we would do well to learn from them.

Mann is an *Atlantic* correspondent. We corresponded by e-mail last week.

—Katie Bacon

Within certain communities—archaeological, anthropological, environmental—there is bitter debate over how many Indians were in the Western Hemisphere before Columbus's arrival, and how actively they managed the land. Could you sketch out why this is such a polemical issue?

The debate over Indian demography gets emotional pretty fast. The greater the pre-contact population, the greater the tally of post-contact losses, and the greater the pre-contact human impact on the environment. Some people don't like scholars who argue for a huge death tally, because it feels to them like another self-hating spasm of political correctness—an academic left-wing attack on Western civilization as inherently murderous. Others don't like the high numbers because they want to view the pre-contact environment as an ecological touchstone—nature as it oughta be. Having too many Indians around interferes with this. They think that arguing that there is no wilderness, no preferred state, is a right-wing strategy for legitimizing a corporate assault on the environment.

In the opening scene of your article, you're flying in a small plane with some scholars over the Beni in Bolivia, a watery plain of 30,000 square miles with islands of forest linked by raised berms. Some scientists believe that this entire landscape was created by a populous society that lived 2,000 years ago. Another group sees little evidence that there was large-scale human habitation of the area. How could there be two such different interpretations of the same landscape? What are your thoughts on the problems inherent in trying to research something where there's so little historical record? And what sort of archaeological evidence do the various factions use to back up their claims?

There's actually more historical record than one might think—the problem is how to interpret it. Many Spanish accounts exist of what the Americas were like just after contact, and also of what Indians said life was like in the years before, but scholars differ on how much to believe these accounts. Similarly, researchers differ on how to treat ecological questions. Some people say, for instance, that the poor soils in Amazonia would have made intensive agriculture unfeasible, and thus there simply could not have been large-scale societies—that would have been impossible. Others say that the poor soils might have made things difficult for conventional agriculture, but agriculture based on trees—remember all those nuts and fruits in the tropics?—could well have been productive enough to sustain large numbers of people. So scholars begin from different assumptions. In the Beni, the area in eastern Bolivia that I visited, the savanna has scores or hundreds of high, forested mounds where the soil is literally thick with pottery fragments—you dig six inches and the soil is half ceramics. To some archaeologists, this suggests (bearing in mind ecological limits) multiple reoccupations by small groups of people. In this view, the mounds are based on natural formations or were built up more or less by accident. To others, this seems ridiculous—the mounds were of course deliberately constructed, they say. And that would take many people. In both cases, how scientists look at the evidence is deeply influenced by their views on larger issues like the role of ecological limits and, I think, their ideas on what humankind is like. Newer archaeologists—to generalize perhaps too much for a moment—tend to think that people are enormously energetic and clever about overcoming obstacles in the natural world. Older ones are more likely to be humbled by ecological limits and (perhaps) more stringent about interpreting data. (Close-minded, their opponents would say.) Many scientific arguments eventually devolve into disputes over details and procedures that are difficult for outsiders to judge. But the archaeologists and anthropologists who are in favor of a larger Indian presence seem to be winning the argument within their disciplines, at least for now. Supposedly Thomas Kuhn (or a philosopher of science like him) said that disputes between researchers are never resolved, but the side with more young scientists wins because it outlives the other side. And it seems that more young people hold this view.

You talk about the power of the "pristine myth" in the environmental community—the idea, in your words, that the Americas in 1491 "were an almost unmarked, even Edenic land." If indeed the landscape of the Americas was actively managed by Indians, the thinking goes, that may complicate efforts to restore the Midwestern prairie, for example, to its original state—because we may not know what that state was. But does it really matter whether we're restoring something to its original state, or to a different state that is still in its way Edenic? Do you see negative repercussions in setting aside conservation land to be untouched by human management? To your last question: me, personally, no. But if we want to do that, we should be mindful of the fact that it is probably highly "unnatural" to do so. "Negative repercussions," in your question, implies harm, which in turn implies standards of good and bad. That's more where the question lies. Many people don't like putting things this baldly, but if there really has been very little "untouched" nature for 10,000 years then it is essentially impossible to go back—conditions have changed too much. But many well-meaning people find it difficult to come out and say, for instance, "we want tall-grass prairie because we think it's really nice and we like it"—especially when they're fighting economic forces. So they tend to invent standards, states putatively preferred by natural systems—wilderness. It's like appealing to a deity, an ecological Ten Commandments that comes from some source outside the fallibly human. Yet if we truly can't return to pristine wilderness, then there's no way around it: we're in charge of deciding how, say, the prairies are going to look. Obviously we don't have absolute control, but we sure have a lot of influence.

How is this debate playing out in the Amazon, where some scientists now argue that most if not all of the region's rain forest was created by humans? If indeed much of this landscape was built, how should we be managing the rain forest and other landscapes previously thought to have been pristine wilderness?

Amazonia is such a huge area that one shouldn't generalize about it all, but I will nonetheless. At the moment, it seems to me that the impact of these scholarly arguments is pretty small. But it may get larger. In recent years many of the nations in Amazonia, especially Brazil, have been cutting back on the subsidies they give to developers, which has resulted in slowing the pace of development. Some of the most obviously ludicrous schemes have not come to pass. But pruning back bad development is not enough. There are too many very poor people in the area, and they have to be offered something positive—a meaningful chance at a better life. The great question is how to improve their welfare without trashing the environment. Ultimately, I think, the new scholarship may play a role in answering that question, by suggesting the ways that Indians in the past created rich urban complexes without stripping the forest bare.

I recently read a book about competing methods of farming in the 1800s. The author, Steven Stoll, argued that those farmers who stayed behind while most farmers were rushing out to the frontier after depleting their eastern farm lands felt they had an almost moral obligation to keep their soil rich and healthy through crop rotation and soil restoration. In general, did the Indians have a similarly "conservationist" approach to their management of the landscape, or would they use up their land and move on?

There's a wonderful book about this very question called *The Ecological Indian* by Shepard Krech, a Brown University anthropologist. (I quoted him once in my article, but if I'd had more space I would have quoted him much more.) So one answer to your question is "read his book." My own answer would be to say that in some sense you can't answer the question, because—and this is something we're not taught in school—the Americas before Columbus were filled with a staggering variety of cultures with wildly different attitudes towards practically everything. You can't say much about Indians "in general," because there were too many exceptions to every rule. Having said this, let me violate my own stricture. Many Indian societies seem to have been really, really good at land management—they make us look like pikers. These groups seem to have been able to transform their environment in the most profound ways without making it less productive. That's not exactly being "conservationist"—the label probably doesn't apply to anyone who burned down much of the Great Plains—but I think it's something we might be able to learn from.

Waves of different diseases decimated the population of the Americas—smallpox, typhoid, bubonic plague, whooping cough, and other diseases that Indians had no resistance to were all brought here by Columbus or those who followed in his wake. But why didn't Indian diseases have a similar effect on Europeans, either directly or indirectly when the diseases were carried back to Europe?

There just doesn't seem to have been nearly as many Indian diseases. "The exchange of infectious diseases ... between the Old World and its American and Australasian colonies has been wondrously one-sided," wrote Alfred Crosby in *Ecological Imperialism*, another terrific book. "Venereal syphilis may be the New World's only important disease export..." The reason for this epidemiological poverty is a matter of speculation. Certainly, as I mention in the article, the relative lack of domestic animals spared the Indians what are called zoonotic diseases. But really nobody can be sure.

Could you talk about the idea of Native Americans as a keystone species—a species, in E. O. Wilson's words, that "affects the survival and abundance of many other species"? How does thinking about them as the Western Hemisphere's keystone species before the arrival of Europeans change our conception of the Americas?

I should first make clear that Native Americans were keystone species in the Americas the same way that Europeans were the keystone species in Europe. They were the keystone species because they were human beings, and human beings are incredibly powerful at shaping environments around themselves. What's interesting is that they seem to have been so good at their job, and managed environments that Americans today like so much, that there has been a tendency of white society to discount the human role.

The implications are multiple, but they perhaps press most closely on our understanding of environmental goals. Very loosely, you can speak of having two general types of environmental goals—reducing the amount of pollutants to avoid consequences to health, and maintaining biological processes in some desired state. The two are obviously linked, but they are not the same thing. Taking lead out of gasoline is an example of the first goal; protecting endangered species is an example of the second.

Human health is a more or less quantifiable goal—you can say "having this amount of lead in the air is bad, because it creates the following bad conditions." (People might disagree with the exact numbers, but rarely with the goal itself.) But maintaining ecosystems and biological processes at a desired state is much fuzzier—what ends are we trying to accomplish, and how will we know when we accomplish them? For one wing of the environmental movement, the answer has been: return as much of the nation as possible to its "natural state" of "wilderness." What was here in 1491 is what we should be striving for.

Problem is, this new generation of anthropologists and archaeologists is saying that as a matter of cold, hard fact the Americas in 1491 were not a wilderness. They were a huge, special garden, planned and maintained by the active efforts of a wildly diverse range of societies. Environmentalists tend not to like this line of argument, because to them it implies that there is no preferred "natural" state—so let the bulldozers rip. And to be fair a lot of anti-green commentators have drawn just this implication. Personally, though, I believe both sides are wrong. Knowing more about what the Indians accomplished suggests that human beings can have a large, long-lasting impact on the landscape without wrecking everything. To me, at least, that seems an incredibly hopeful notion to carry along into tomorrow.

As late as 1987, you point out, a standard American history textbook "described the Americas before Columbus as 'empty of mankind and its works.'" How do you think the history books fifteen years from now will read? Will students ever study the lost civilization of the Ancient Incas or the Caddoans as they now do the Babylonians or the Phoenicians?

Studying the Incas would really be something, wouldn't it? I can see the college class: Totalitarianism from Machu Picchu to Moscow. Myself, I'd hope they would learn something about the Northwest Coast Indians, who had wonderfully interesting economic institutions; the Iroquois, who so importantly affected both American history and Americans' concepts about freedom; the Mayans, whose ruins I always think of as being more interesting than those of Greek and Rome—by now, my drift should be obvious. These are fascinating societies and worth knowing about; I hope our children learn about them. I'd also give a plug for learning about Indians today, a collection of fast-growing and interesting groups that add up to far more than casinos and a shameful history of mistreatment.

1491

BY CHARLES C. MANN

MARCH 2002 EXCERPT FROM THE ATLANTIC

The plane took off in weather that was surprisingly cool for north-central Bolivia and flew east, toward the Brazilian border. In a few minutes the roads and houses disappeared, and the only evidence of human settlement was the cattle scattered over the savannah like jimmies on ice cream. Then they, too, disappeared. By that time the archaeologists had their cameras out and were clicking away in delight.

Below us was the Beni, a Bolivian province about the size of Illinois and Indiana put together, and nearly as flat. For almost half the year rain and snowmelt from the mountains to the south and west cover the land with an irregular, slowly moving skin of water that eventually ends up in the province's northern rivers, which are sub-subtributaries of the Amazon. The rest of the year the water dries up and the bright-green vastness turns into something that resembles a desert. This peculiar, remote, watery plain was what had drawn the researchers' attention, and not just because it was one of the few places on earth inhabited by people who might never have seen Westerners with cameras.

Clark Erickson and William Balée, the archaeologists, sat up front. Erickson is based at the University of Pennsylvania; he works in concert with a Bolivian archaeologist, whose seat in the plane I usurped that day. Balée is at Tulane University, in New Orleans. He is actually an anthropologist, but as native peoples have vanished, the distinction between anthropologists and archaeologists has blurred. The two men differ in build, temperament, and scholarly proclivity, but they pressed their faces to the windows with identical enthusiasm.

Dappled across the grasslands below was an archipelago of forest islands, many of them startlingly round and hundreds of acres across. Each island rose ten or thirty or sixty feet above the floodplain, allowing trees to grow that would otherwise never survive the water. The forests were linked by raised berms, as straight as a rifle shot and up to three miles long. It is Erickson's belief that this entire landscape—30,000 square miles of forest mounds surrounded by raised fields and linked by causeways—was constructed by a complex, populous society more than 2,000 years ago. Balée, newer to the Beni, leaned toward this view but was not yet ready to commit himself.

Erickson and Balée belong to a cohort of scholars that has radically challenged conventional notions of what the Western Hemisphere was like before Columbus. When I went to high school, in the 1970s, I was taught that Indians came to the Americas across the Bering Strait about 12,000 years ago, that they lived for the most part in small, isolated groups, and that they had so little impact on their environment that even after millennia of habitation it remained mostly wilderness. My son picked up the same ideas at his schools. One way to summarize the views of people like Erickson and Balée would be to say that in their opinion this picture of Indian life is wrong in almost every aspect. 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 dominated by humankind.

Given the charged relations between white societies and native peoples, inquiry into Indian culture and history is inevitably contentious. But the recent scholarship is especially controversial. To begin with, some researchers—many but not all from an older generation—deride the new theories as fantasies arising from an almost willful misinterpretation of data and a perverse kind of political correctness. "I have seen no evidence that large numbers of people ever lived in the Beni," says Betty J. Meggers, of the Smithsonian Institution. "Claiming otherwise is just wishful thinking." Similar criticisms apply to many of the new scholarly claims about Indians, according to Dean R. Snow, an anthropologist at Pennsylvania State University. The problem is that "you can make the meager evidence from the ethnohistorical record tell you anything you want," he says. "It's really easy to kid yourself."

More important are the implications of the new theories for today's ecological battles. Much of the environmental movement is animated, consciously or not, by what William Denevan, a geographer at the University of Wisconsin, calls, polemically, "the pristine myth"—the belief that the Americas in 1491 were an almost unmarked, even Edenic land, "untrammeled by man," in the words of the Wilderness Act of 1964, one of the nation's first and most important environmental laws. As the University of Wisconsin historian William Cronon has written, restoring this long-ago, putatively natural state is, in the view of environmentalists, a task that society is morally bound to undertake. Yet if the new view is correct and the work of humankind was pervasive, where does that leave efforts to restore nature?

The Beni is a case in point. In addition to building up the Beni mounds for houses and gardens, Erickson says, the Indians trapped fish in the seasonally flooded grassland. Indeed, he says, they fashioned dense zigzagging networks of earthen fish weirs between the causeways. To keep the habitat clear of unwanted trees and undergrowth, they regularly set huge areas on fire. Over the centuries the burning created an intricate ecosystem of fire-adapted plant species dependent on native pyrophilia. The current inhabitants of the Beni still burn, although now it is to maintain the savannah for cattle. When we flew over the area, the dry season had just begun, but mile-long lines of flame were already on the march. In the charred areas behind the fires were the blackened spikes of trees—many of them, one assumes, of the varieties that activists fight to save in other parts of Amazonia.

After we landed, I asked Balée, Should we let people keep burning the Beni? Or should we let the trees invade and create a verdant tropical forest in the grasslands, even if one had not existed here for millennia?

Balée laughed. "You're trying to trap me, aren't you?" he said.

Like a Club Between the Eyes

According to family lore, my great-grandmother's great-grandmother's great-grandfather was the first white person hanged in America. His name was John Billington. He came on the *Mayflower*, which anchored off the coast of Massachusetts on November 9, 1620. Billington was not a Puritan; within six months of arrival he also became the first white person in America to be tried for complaining about the police. "He is a knave," William Bradford, the colony's governor, wrote of Billington, "and so will live and die." What one historian called Billington's "troublesome career" ended in 1630, when he was hanged for murder. My family has always said that he was framed—but we *would* say that, wouldn't we?

A few years ago it occurred to me that my ancestor and everyone else in the colony had voluntarily enlisted in a venture that brought them to New England without food or shelter six weeks before winter. Half the 102 people on the *Mayflower* made it through to spring, which to me was amazing. How, I wondered, did they survive?

In his history of Plymouth Colony, Bradford provided the answer: by robbing Indian houses and graves. The *Mayflower* first hove to at Cape Cod. An armed company staggered out. Eventually it found a recently deserted Indian settlement. The newcomers—hungry, cold, sick—dug up graves and ransacked houses, looking for underground stashes of corn. "And sure it was God's good providence that we found this corn," Bradford wrote, "for else we know not how we should have done." (He felt uneasy about the thievery, though.) When the colonists came to Plymouth, a month later, they set up shop in another deserted Indian village. All through the coastal forest the Indians had "died on heapes, as they lay in their houses," the English trader Thomas Morton noted. "And the bones and skulls upon the severall places of their habitations made such a spectacle" that to Morton the Massachusetts woods seemed to be "a new found Golgotha"—the hill of executions in Roman Jerusalem.

To the Pilgrims' astonishment, one of the corpses they exhumed on Cape Cod had blond hair. A French ship had been wrecked there several years earlier. The Patuxet Indians imprisoned a few survivors. One of them supposedly learned enough of the local language to inform his captors that God would destroy them for their misdeeds. The Patuxet scoffed at the threat. But the Europeans carried a disease, and they bequeathed it to their jailers. The epidemic (probably of viral hepatitis, according to a study by Arthur E. Spiess, an archaeologist at the Maine Historic Preservation Commission, and Bruce D. Spiess, the director of clinical research at the Medical College of Virginia) took years to exhaust itself and may have killed 90 percent of the people in coastal New England. It made a huge difference to American history. "The good hand of God favored our beginnings," Bradford mused, by "sweeping away great multitudes of the natives ... that he might make room for us."

By the time my ancestor set sail on the *Mayflower*, Europeans had been visiting New England for more than a hundred years. English, French, Italian, Spanish, and Portuguese mariners regularly plied the coastline, trading what they could, occasionally kidnapping the inhabitants for slaves. New England, the Europeans saw, was thickly settled and well defended. In 1605 and 1606 Samuel de Champlain visited Cape Cod, hoping to establish a French base. He abandoned the idea. Too many people already lived there. A year later Sir Ferdinando Gorges—British despite his name—tried to establish an English community in southern Maine. It had more founders than Plymouth and seems to have been better organized. Confronted by numerous well-armed local Indians, the settlers abandoned the project within

months. The Indians at Plymouth would surely have been an equal obstacle to my ancestor and his ramshackle expedition had disease not intervened.

Faced with such stories, historians have long wondered how many people lived in the Americas at the time of contact. "Debated since Columbus attempted a partial census on Hispaniola in 1496," William Denevan has written, this "remains one of the great inquiries of history." (In 1976 Denevan assembled and edited an entire book on the subject, *The Native Population of the Americas in 1492*.) The first scholarly estimate of the indigenous population was made in 1910 by James Mooney, a distinguished ethnographer at the Smithsonian Institution. Combing through old documents, he concluded that in 1491 North America had 1.15 million inhabitants. Mooney's glittering reputation ensured that most subsequent researchers accepted his figure uncritically.

That changed in 1966, when Henry F. Dobyns published "Estimating Aboriginal American Population: An Appraisal of Techniques With a New Hemispheric Estimate," in the journal *Current Anthropology*. Despite the carefully neutral title, his argument was thunderous, its impact long-lasting. In the view of James Wilson, the author of *The Earth Shall Weep* (1998), a history of indigenous Americans, Dobyns's colleagues "are still struggling to get out of the crater that paper left in anthropology." Not only anthropologists were affected. Dobyns's estimate proved to be one of the opening rounds in today's culture wars.

Dobyns began his exploration of pre-Columbian Indian demography in the early 1950s, when he was a graduate student. At the invitation of a friend, he spent a few months in northern Mexico, which is full of Spanish-era missions. There he poked through the crumbling leather-bound ledgers in which Jesuits recorded local births and deaths. Right away he noticed how many more deaths there were. The Spaniards arrived, and then Indians died—in huge numbers, at incredible rates. It hit him, Dobyns told me recently, "like a club right between the eyes."

It took Dobyns eleven years to obtain his Ph.D. Along the way he joined a rural-development project in Peru, which until colonial times was the seat of the Incan empire. Remembering what he had seen at the northern fringe of the Spanish conquest, Dobyns decided to compare it with figures for the south. He burrowed into the papers of the Lima cathedral and read apologetic Spanish histories. The Indians in Peru, Dobyns concluded, had faced plagues from the day the conquistadors showed up—in fact, before then: smallpox arrived around 1525, seven years ahead of the Spanish. Brought to Mexico apparently by a single sick Spaniard, it swept south and eliminated more than half the population of the Incan empire. Smallpox claimed the Incan dictator Huayna Capac and much of his family, setting off a calamitous war of succession. So complete was the chaos that Francisco Pizarro was able to seize an empire the size of Spain and Italy combined with a force of 168 men.

Smallpox was only the first epidemic. Typhus (probably) in 1546, influenza and smallpox together in 1558, smallpox again in 1589, diphtheria in 1614, measles in 1618—all ravaged the remains of Incan culture. Dobyns was the first social scientist to piece together this awful picture, and he naturally rushed his findings into print. Hardly anyone paid attention. But Dobyns was already working on a second, related question: If all those people died, how many had been living there to begin with? Before Columbus, Dobyns calculated, the Western Hemisphere held ninety to 112 million people. Another way of saying this is that in 1491 more people lived in the Americas than in Europe.

His argument was simple but horrific. It is well known that Native Americans had no experience with many European diseases and were therefore immunologically unprepared—"virgin soil," in the metaphor of epidemiologists. What Dobyns realized was that such diseases could have swept from the coastlines initially visited by Europeans to inland areas controlled by Indians who had never seen a white person. The first whites to explore many parts of the Americas may therefore have encountered places that were already depopulated. Indeed, Dobyns argued, they must have done so.

Peru was one example, the Pacific Northwest another. In 1792 the British navigator George Vancouver led the first European expedition to survey Puget Sound. He found a vast charnel house: human remains "promiscuously scattered about the beach, in great numbers." Smallpox, Vancouver's crew discovered, had preceded them. Its few survivors, second lieutenant Peter Puget noted, were "most terribly pitted ... indeed many have lost their Eyes." In *Pox Americana,* (2001), Elizabeth Fenn, a historian at George Washington University, contends that the disaster on the northwest coast was but a small part of a continental pandemic that erupted near Boston in 1774 and cut down Indians from Mexico to Alaska.

Because smallpox was not endemic in the Americas, colonials, too, had not acquired any immunity. The virus, an equal-opportunity killer, swept through the Continental Army and stopped the drive into Quebec. The American Revolution would be lost, Washington and other rebel leaders feared, if the contagion did to the colonists what it had done to the Indians. "The small Pox! The small Pox!" John Adams wrote to his wife, Abigail. "What shall We do with it?" In retrospect, Fenn says, "One of George Washington's most brilliant moves was to inoculate the army against smallpox during the Valley Forge winter of '78." Without inoculation smallpox could easily have given the United States back to the British.

So many epidemics occurred in the Americas, Dobyns argued, that the old data used by Mooney and his successors represented population nadirs. From the few cases in which before-and-after totals are known with relative certainty, Dobyns estimated that in the first 130 years of contact about 95 percent of the people in the Americas died—the worst demographic calamity in recorded history.

Dobyns's ideas were quickly attacked as politically motivated, a push from the hate-America crowd to inflate the toll of imperialism. The attacks continue to this day. "No question about it, some people want those higher numbers," says Shepard Krech III, a Brown University anthropologist who is the author of *The Ecological Indian* (1999). These people, he says, were thrilled when Dobyns revisited the subject in a book, *Their Numbers Become Thinned* (1983)—and revised his own estimates upward. Perhaps Dobyns's most vehement critic is David Henige, a bibliographer of Africana at the University of Wisconsin, whose *Numbers From Nowhere* (1998) is a landmark in the literature of demographic fulmination. "Suspect in 1966, it is no less suspect nowadays," Henige wrote of Dobyns's work. "If anything, it is worse."

When Henige wrote *Numbers From Nowhere*, the fight about pre-Columbian populations had already consumed forests' worth of trees; his bibliography is ninety pages long. And the dispute shows no sign of abating. More and more people have jumped in. This is partly because the subject is inherently fascinating. But more likely the increased interest in the debate is due to the growing realization of the high political and ecological stakes.

Inventing by the Millions

On May 30, 1539, Hernando de Soto landed his private army near Tampa Bay, in Florida. Soto, as he was called, was a novel figure: half warrior, half venture capitalist. He had grown very rich very young by becoming a market leader in the nascent trade for Indian slaves. The profits had helped to fund Pizarro's seizure of the Incan empire, which had made Soto wealthier still. Looking quite literally for new worlds to conquer, he persuaded the Spanish Crown to let him loose in North America. He spent one fortune to make another. He came to Florida with 200 horses, 600 soldiers, and 300 pigs.

From today's perspective, it is difficult to imagine the ethical system that would justify Soto's actions. For four years his force, looking for gold, wandered through what is now Florida, Georgia, North and South Carolina, Tennessee, Alabama, Mississippi, Arkansas, and Texas, wrecking almost everything it touched. The inhabitants often fought back vigorously, but they had never before encountered an army with horses and guns. Soto died of fever with his expedition in ruins; along the way his men had managed to rape, torture, enslave, and kill countless Indians. But the worst thing the Spaniards did, some researchers say, was entirely without malice—bring the pigs.

According to Charles Hudson, an anthropologist at the University of Georgia who spent fifteen years reconstructing the path of the expedition, Soto crossed the Mississippi a few miles downstream from the present site of Memphis. It was a nervous passage: the Spaniards were watched by several thousand Indian warriors. Utterly without fear, Soto brushed past the Indian force into what is now eastern Arkansas, through thickly settled land—"very well peopled with large towns," one of his men later recalled, "two or three of which were to be seen from one town." Eventually the Spaniards approached a cluster of small cities, each protected by earthen walls, sizeable moats, and deadeye archers. In his usual fashion, Soto brazenly marched in, stole food, and marched out.

After Soto left, no Europeans visited this part of the Mississippi Valley for more than a century. Early in 1682 whites appeared again, this time Frenchmen in canoes. One of them was Réné-Robert Cavelier, Sieur de la Salle. The French passed through the area where Soto had found cities cheek by jowl. It was deserted—La Salle didn't see an Indian village for 200 miles. About fifty settlements existed in this strip of the Mississippi when Soto showed up, according to Anne Ramenofsky, an anthropologist at the University of New Mexico. By La Salle's time the number had shrunk to perhaps ten, some probably inhabited by recent immigrants. Soto "had a privileged glimpse" of an Indian world, Hudson says. "The window opened and slammed shut. When the French came in and the record opened up again, it was a transformed reality. A civilization crumbled. The question is, how did this happen?"

The question is even more complex than it may seem. Disaster of this magnitude suggests epidemic disease. In the view of Ramenofsky and Patricia Galloway, an anthropologist at the University of Texas, the source of the contagion was very likely not Soto's army but its ambulatory meat locker: his 300 pigs. Soto's force itself was too small to be an effective biological weapon. Sicknesses like measles and smallpox would have burned through his 600 soldiers long before they reached the Mississippi. But the same would not have held true for the pigs, which multiplied rapidly and were able to transmit their diseases to wildlife in the surrounding forest. When human beings and domesticated animals live close together, they trade microbes with abandon. Over time mutation spawns new diseases: avian influenza becomes human influenza, bovine rinderpest becomes measles. Unlike Europeans, Indians did not live in close quarters with animals—they domesticated only the dog, the llama, the alpaca, the guinea pig, and, here and there, the turkey and the Muscovy duck. In some ways this is not surprising: the New World

had fewer animal candidates for taming than the Old. Moreover, few Indians carry the gene that permits adults to digest lactose, a form of sugar abundant in milk. Non-milk-drinkers, one imagines, would be less likely to work at domesticating milk-giving animals. But this is guesswork. The fact is that what scientists call zoonotic disease was little known in the Americas. Swine alone can disseminate anthrax, brucellosis, leptospirosis, taeniasis, trichinosis, and tuberculosis. Pigs breed exuberantly and can transmit diseases to deer and turkeys. Only a few of Soto's pigs would have had to wander off to infect the forest.

Indeed, the calamity wrought by Soto apparently extended across the whole Southeast. The Coosa city-states, in western Georgia, and the Caddoan-speaking civilization, centered on the Texas-Arkansas border, disintegrated soon after Soto appeared. The Caddo had had a taste for monumental architecture: public plazas, ceremonial platforms, mausoleums. After Soto's army left, notes Timothy K. Perttula, an archaeological consultant in Austin, Texas, the Caddo stopped building community centers and began digging community cemeteries. Between Soto's and La Salle's visits, Perttula believes, the Caddoan population fell from about 200,000 to about 8,500—a drop of nearly 96 percent. In the eighteenth century the tally shrank further, to 1,400. An equivalent loss today in the population of New York City would reduce it to 56,000—not enough to fill Yankee Stadium. "That's one reason whites think of Indians as nomadic hunters," says Russell Thornton, an anthropologist at the University of California at Los Angeles. "Everything else—all the heavily populated urbanized societies—was wiped out."

Could a few pigs truly wreak this much destruction? Such apocalyptic scenarios invite skepticism. As a rule, viruses, microbes, and parasites are rarely lethal on so wide a scale—a pest that wipes out its host species does not have a bright evolutionary future. In its worst outbreak, from 1347 to 1351, the European Black Death claimed only a third of its victims. (The rest survived, though they were often disfigured or crippled by its effects.) The Indians in Soto's path, if Dobyns, Ramenofsky, and Perttula are correct, endured losses that were incomprehensibly greater.

One reason is that Indians were fresh territory for many plagues, not just one. Smallpox, typhoid, bubonic plague, influenza, mumps, measles, whooping cough—all rained down on the Americas in the century after Columbus. (Cholera, malaria, and scarlet fever came later.) Having little experience with epidemic diseases, Indians had no knowledge of how to combat them. In contrast, Europeans were well versed in the brutal logic of quarantine. They boarded up houses in which plague appeared and fled to the countryside. In Indian New England, Neal Salisbury, a historian at Smith College, wrote in *Manitou and Providence* (1982), family and friends gathered with the shaman at the sufferer's bedside to wait out the illness—a practice that "could only have served to spread the disease more rapidly."

Indigenous biochemistry may also have played a role. The immune system constantly scans the body for molecules that it can recognize as foreign—molecules belonging to an invading virus, for instance. No one's immune system can identify all foreign presences. Roughly speaking, an individual's set of defensive tools is known as his MHC type. Because many bacteria and viruses mutate easily, they usually attack in the form of several slightly different strains. Pathogens win when MHC types miss some of the strains and the immune system is not stimulated to act. Most human groups contain many MHC types; a strain that slips by one person's defenses will be nailed by the defenses of the next. But, according to Francis L. Black, an epidemiologist at Yale University, Indians are characterized by unusually homogenous MHC types. One out of three South American Indians have similar MHC types; among

Africans the corresponding figure is one in 200. The cause is a matter for Darwinian speculation, the effects less so.

In 1966 Dobyns's insistence on the role of disease was a shock to his colleagues. Today the impact of European pathogens on the New World is almost undisputed. Nonetheless, the fight over Indian numbers continues with undiminished fervor. Estimates of the population of North America in 1491 disagree by an order of magnitude—from 18 million, Dobyns's revised figure, to 1.8 million, calculated by Douglas H. Ubelaker, an anthropologist at the Smithsonian. To some "high counters," as David Henige calls them, the low counters' refusal to relinquish the vision of an empty continent is irrational or worse. "Non-Indian 'experts' always want to minimize the size of aboriginal populations," says Lenore Stiffarm, a Native American-education specialist at the University of Saskatchewan. The smaller the numbers of Indians, she believes, the easier it is to regard the continent as having been up for grabs. "It's perfectly acceptable to move into unoccupied land," Stiffarm says. "And land with only a few 'savages' is the next best thing."

"Most of the arguments for the very large numbers have been theoretical," Ubelaker says in defense of low counters. "When you try to marry the theoretical arguments to the data that are available on individual groups in different regions, it's hard to find support for those numbers." Archaeologists, he says, keep searching for the settlements in which those millions of people supposedly lived, with little success. "As more and more excavation is done, one would expect to see more evidence for dense populations than has thus far emerged." Dean Snow, the Pennsylvania State anthropologist, examined Colonial-era Mohawk Iroquois sites and found "no support for the notion that ubiquitous pandemics swept the region." In his view, asserting that the continent was filled with people who left no trace is like looking at an empty bank account and claiming that it must once have held millions of dollars.

The low counters are also troubled by the Dobynsian procedure for recovering original population numbers: applying an assumed death rate, usually 95 percent, to the observed population nadir. Ubelaker believes that the lowest point for Indians in North America was around 1900, when their numbers fell to about half a million. Assuming a 95 percent death rate, the pre-contact population would have been 10 million. Go up one percent, to a 96 percent death rate, and the figure jumps to 12.5 million—arithmetically creating more than two million people from a tiny increase in mortality rates. At 98 percent the number bounds to 25 million. Minute changes in baseline assumptions produce wildly different results.

"It's an absolutely unanswerable question on which tens of thousands of words have been spent to no purpose," Henige says. In 1976 he sat in on a seminar by William Denevan, the Wisconsin geographer. An "epiphanic moment" occurred when he read shortly afterward that scholars had "uncovered" the existence of eight million people in Hispaniola. *Can you just invent millions of people?* he wondered. "We can make of the historical record that there was depopulation and movement of people from internecine warfare and diseases," he says. "But as for how much, who knows? When we start putting numbers to something like that—applying large figures like ninety-five percent—we're saying things we shouldn't say. The number implies a level of knowledge that's impossible."

Nonetheless, one must try—or so Denevan believes. In his estimation the high counters (though not the highest counters) seem to be winning the argument, at least for now. No definitive data exist, he says, but the majority of the extant evidentiary scraps support their side. Even Henige is no low counter. When I asked him what he thought the population of the Americas was before Columbus, he insisted

that any answer would be speculation and made me promise not to print what he was going to say next. Then he named a figure that forty years ago would have caused a commotion.

To Elizabeth Fenn, the smallpox historian, the squabble over numbers obscures a central fact. Whether one million or 10 million or 100 million died, she believes, the pall of sorrow that engulfed the hemisphere was immeasurable. Languages, prayers, hopes, habits, and dreams—entire ways of life hissed away like steam. The Spanish and the Portuguese lacked the germ theory of disease and could not explain what was happening (let alone stop it). Nor can we explain it; the ruin was too long ago and too all-encompassing. In the long run, Fenn says, the consequential finding is not that many people died but that many people once lived. The Americas were filled with a stunningly diverse assortment of peoples who had knocked about the continents for millennia. "You have to wonder," Fenn says. "What were all those people *up* to in all that time?"

Buffalo Farm

In 1810 Henry Brackenridge came to Cahokia, in what is now southwest Illinois, just across the Mississippi from St. Louis. Born close to the frontier, Brackenridge was a budding adventure writer; his *Views of Louisiana*, published three years later, was a kind of nineteenth-century *Into Thin Air*, with terrific adventure but without tragedy. Brackenridge had an eye for archaeology, and he had heard that Cahokia was worth a visit. When he got there, trudging along the desolate Cahokia River, he was "struck with a degree of astonishment." Rising from the muddy bottomland was a "stupendous pile of earth," vaster than the Great Pyramid at Giza. Around it were more than a hundred smaller mounds, covering an area of five square miles. At the time, the area was almost uninhabited. One can only imagine what passed through Brackenridge's mind as he walked alone to the ruins of the biggest Indian city north of the Rio Grande.

To Brackenridge, it seemed clear that Cahokia and the many other ruins in the Midwest had been constructed by Indians. It was not so clear to everyone else. Nineteenth-century writers attributed them to, among others, the Vikings, the Chinese, the "Hindoos," the ancient Greeks, the ancient Egyptians, lost tribes of Israelites, and even straying bands of Welsh. (This last claim was surprisingly widespread; when Lewis and Clark surveyed the Missouri, Jefferson told them to keep an eye out for errant bands of Welsh-speaking white Indians.) The historian George Bancroft, dean of his profession, was a dissenter: the earthworks, he wrote in 1840, were purely natural formations.

Bancroft changed his mind about Cahokia, but not about Indians. To the end of his days he regarded them as "feeble barbarians, destitute of commerce and of political connection." His characterization lasted, largely unchanged, for more than a century. Samuel Eliot Morison, the winner of two Pulitzer Prizes, closed his monumental *European Discovery of America* (1974) with the observation that Native Americans expected only "short and brutish lives, void of hope for any future." As late as 1987 *American History: A Survey*, a standard high school textbook by three well-known historians, described the Americas before Columbus as "empty of mankind and its works." The story of Europeans in the New World, the book explained, "is the story of the creation of a civilization where none existed."

Alfred Crosby, a historian at the University of Texas, came to other conclusions. Crosby's *The Columbian Exchange: Biological Consequences of 1492* caused almost as much of a stir when it was published, in 1972, as Henry Dobyns's calculation of Indian numbers six years earlier, though in different circles. Crosby was a standard names-and-battles historian who became frustrated by the random contingency of political events. "Some trivial thing happens and you have this guy winning the presidency instead of that guy," he says. He decided to go deeper. After he finished his manuscript, it sat on his shelf—he couldn't find a publisher willing to be associated with his new ideas. It took him three years to persuade a small editorial house to put it out. *The Columbian Exchange* has been in print ever since; a companion, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*, appeared in 1986.

Human history, in Crosby's interpretation, is marked by two world-altering centers of invention: the Middle East and central Mexico, where Indian groups independently created nearly all of the Neolithic innovations, writing included. The Neolithic Revolution began in the Middle East about 10,000 years ago. In the next few millennia humankind invented the wheel, the metal tool, and agriculture. The Sumerians eventually put these inventions together, added writing, and became the world's first civilization.

Afterward Sumeria's heirs in Europe and Asia frantically copied one another's happiest discoveries; innovations ricocheted from one corner of Eurasia to another, stimulating technological progress. Native Americans, who had crossed to Alaska before Sumeria, missed out on the bounty. "They had to do everything on their own," Crosby says. Remarkably, they succeeded.

When Columbus appeared in the Caribbean, the descendants of the world's two Neolithic civilizations collided, with overwhelming consequences for both. American Neolithic development occurred later than that of the Middle East, possibly because the Indians needed more time to build up the requisite population density. Without beasts of burden they could not capitalize on the wheel (for individual workers on uneven terrain skids are nearly as effective as carts for hauling), and they never developed steel. But in agriculture they handily outstripped the children of Sumeria. Every tomato in Italy, every potato in Ireland, and every hot pepper in Thailand came from this hemisphere. Worldwide, more than half the crops grown today were initially developed in the Americas.

Maize, as corn is called in the rest of the world, was a triumph with global implications. Indians developed an extraordinary number of maize varieties for different growing conditions, which meant that the crop could and did spread throughout the planet. Central and Southern Europeans became particularly dependent on it; maize was the staple of Serbia, Romania, and Moldavia by the nineteenth century. Indian crops dramatically reduced hunger, Crosby says, which led to an Old World population boom.

Along with peanuts and manioc, maize came to Africa and transformed agriculture there, too. "The probability is that the population of Africa was greatly increased because of maize and other American Indian crops," Crosby says. "Those extra people helped make the slave trade possible." Maize conquered Africa at the time when introduced diseases were leveling Indian societies. The Spanish, the Portuguese, and the British were alarmed by the death rate among Indians, because they wanted to exploit them as workers. Faced with a labor shortage, the Europeans turned their eyes to Africa. The continent's quarrelsome societies helped slave traders to siphon off millions of people. The maize-fed population boom, Crosby believes, let the awful trade continue without pumping the well dry.

Back home in the Americas, Indian agriculture long sustained some of the world's largest cities. The Aztec capital of Tenochtitlán dazzled Hernán Cortés in 1519; it was bigger than Paris, Europe's greatest metropolis. The Spaniards gawped like hayseeds at the wide streets, ornately carved buildings, and markets bright with goods from hundreds of miles away. They had never before seen a city with botanical gardens, for the excellent reason that none existed in Europe. The same novelty attended the force of a thousand men that kept the crowded streets immaculate. (Streets that weren't ankle-deep in sewage! The conquistadors had never heard of such a thing.) Central America was not the only locus of prosperity. Thousands of miles north, John Smith, of Pocahontas fame, visited Massachusetts in 1614, before it was emptied by disease, and declared that the land was "so planted with Gardens and Corne fields, and so well inhabited with a goodly, strong and well proportioned people ... [that] I would rather live here than any where."

Smith was promoting colonization, and so had reason to exaggerate. But he also knew the hunger, sickness, and oppression of European life. France—"by any standards a privileged country," according to its great historian, Fernand Braudel—experienced seven nationwide famines in the fifteenth century and thirteen in the sixteenth. Disease was hunger's constant companion. During epidemics in London the dead were heaped onto carts "like common dung" (the simile is Daniel Defoe's) and trundled through

the streets. The infant death rate in London orphanages, according to one contemporary source, was 88 percent. Governments were harsh, the rule of law arbitrary. The gibbets poking up in the background of so many old paintings were, Braudel observed, "merely a realistic detail."

The Earth Shall Weep, James Wilson's history of Indian America, puts the comparison bluntly: "the western hemisphere was larger, richer, and more populous than Europe." Much of it was freer, too. Europeans, accustomed to the serfdom that thrived from Naples to the Baltic Sea, were puzzled and alarmed by the democratic spirit and respect for human rights in many Indian societies, especially those in North America. In theory, the sachems of New England Indian groups were absolute monarchs. In practice, the colonial leader Roger Williams wrote, "they will not conclude of ought ... unto which the people are averse."

Pre-1492 America wasn't a disease-free paradise, Dobyns says, although in his "exuberance as a writer," he told me recently, he once made that claim. Indians had ailments of their own, notably parasites, tuberculosis, and anemia. The daily grind was wearing; life-spans in America were only as long as or a little longer than those in Europe, if the evidence of indigenous graveyards is to be believed. Nor was it a political utopia—the Inca, for instance, invented refinements to totalitarian rule that would have intrigued Stalin. Inveterate practitioners of what the historian Francis Jennings described as "state terrorism practiced horrifically on a huge scale," the Inca ruled so cruelly that one can speculate that their surviving subjects might actually have been better off under Spanish rule.

I asked seven anthropologists, archaeologists, and historians if they would rather have been a typical Indian or a typical European in 1491. None was delighted by the question, because it required judging the past by the standards of today—a fallacy disparaged as "presentism" by social scientists. But every one chose to be an Indian. Some early colonists gave the same answer. Horrifying the leaders of Jamestown and Plymouth, scores of English ran off to live with the Indians. My ancestor shared their desire, which is what led to the trumped-up murder charges against him—or that's what my grandfather told me, anyway.

As for the Indians, evidence suggests that they often viewed Europeans with disdain. The Hurons, a chagrined missionary reported, thought the French possessed "little intelligence in comparison to themselves." Europeans, Indians said, were physically weak, sexually untrustworthy, atrociously ugly, and just plain dirty. (Spaniards, who seldom if ever bathed, were amazed by the Aztec desire for personal cleanliness.) A Jesuit reported that the "Savages" were disgusted by handkerchiefs: "They say, we place what is unclean in a fine white piece of linen, and put it away in our pockets as something very precious, while they throw it upon the ground." The Micmac scoffed at the notion of French superiority. If Christian civilization was so wonderful, why were its inhabitants leaving?

Like people everywhere, Indians survived by cleverly exploiting their environment. Europeans tended to manage land by breaking it into fragments for farmers and herders. Indians often worked on such a grand scale that the scope of their ambition can be hard to grasp. They created small plots, as Europeans did (about 1.5 million acres of terraces still exist in the Peruvian Andes), but they also reshaped entire landscapes to suit their purposes. A principal tool was fire, used to keep down underbrush and create the open, grassy conditions favorable for game. Rather than domesticating animals for meat, Indians retooled whole ecosystems to grow bumper crops of elk, deer, and bison. The first white settlers in Ohio found forests as open as English parks—they could drive carriages through the woods. Along the Hudson River the annual fall burning lit up the banks for miles on end; so flashy was the show that the Dutch in

New Amsterdam boated upriver to goggle at the blaze like children at fireworks. In North America, Indian torches had their biggest impact on the Midwestern prairie, much or most of which was created and maintained by fire. Millennia of exuberant burning shaped the plains into vast buffalo farms. When Indian societies disintegrated, forest invaded savannah in Wisconsin, Illinois, Kansas, Nebraska, and the Texas Hill Country. Is it possible that the Indians changed the Americas more than the invading Europeans did? "The answer is probably yes for most regions for the next 250 years or so" after Columbus, William Denevan wrote, "and for some regions right up to the present time."

When scholars first began increasing their estimates of the ecological impact of Indian civilization, they met with considerable resistance from anthropologists and archaeologists. Over time the consensus in the human sciences changed. Under Denevan's direction, Oxford University Press has just issued the third volume of a huge catalogue of the "cultivated landscapes" of the Americas. This sort of phrase still provokes vehement objection—but the main dissenters are now ecologists and environmentalists. The disagreement is encapsulated by Amazonia, which has become *the* emblem of vanishing wilderness—an admonitory image of untouched Nature. Yet recently a growing number of researchers have come to believe that Indian societies had an enormous environmental impact on the jungle. Indeed, some anthropologists have called the Amazon forest itself a cultural artifact—that is, an artificial object.

Green Prisons

Northern visitors' first reaction to the storied Amazon rain forest is often disappointment. Ecotourist brochures evoke the immensity of Amazonia but rarely dwell on its extreme flatness. In the river's first 2,900 miles the vertical drop is only 500 feet. The river oozes like a huge runnel of dirty metal through a landscape utterly devoid of the romantic crags, arroyos, and heights that signify wildness and natural spectacle to most North Americans. Even the animals are invisible, although sometimes one can hear the bellow of monkey choruses. To the untutored eye—mine, for instance—the forest seems to stretch out in a monstrous green tangle as flat and incomprehensible as a printed circuit board.

The area east of the lower-Amazon town of Santarém is an exception. A series of sandstone ridges several hundred feet high reach down from the north, halting almost at the water's edge. Their tops stand drunkenly above the jungle like old tombstones. Many of the caves in the buttes are splattered with ancient petroglyphs—renditions of hands, stars, frogs, and human figures, all reminiscent of Miró, in overlapping red and yellow and brown. In recent years one of these caves, La Caverna da Pedra Pintada (Painted Rock Cave), has drawn attention in archaeological circles.

Wide and shallow and well lit, Painted Rock Cave is less thronged with bats than some of the other caves. The arched entrance is twenty feet high and lined with rock paintings. Out front is a sunny natural patio suitable for picnicking, edged by a few big rocks. People lived in this cave more than 11,000 years ago. They had no agriculture yet, and instead ate fish and fruit and built fires. During a recent visit I ate a sandwich atop a particularly inviting rock and looked over the forest below. The first Amazonians, I thought, must have done more or less the same thing.

In college I took an introductory anthropology class in which I read *Amazonia: Man and Culture in a Counterfeit Paradise* (1971), perhaps the most influential book ever written about the Amazon, and one that deeply impressed me at the time. Written by Betty J. Meggers, the Smithsonian archaeologist, *Amazonia* says that the apparent lushness of the rain forest is a sham. The soils are poor and can't hold nutrients—the jungle flora exists only because it snatches up everything worthwhile before it leaches away in the rain. Agriculture, which depends on extracting the wealth of the soil, therefore faces inherent ecological limitations in the wet desert of Amazonia.

As a result, Meggers argued, Indian villages were forced to remain small—any report of "more than a few hundred" people in permanent settlements, she told me recently, "makes my alarm bells go off." Bigger, more complex societies would inevitably overtax the forest soils, laying waste to their own foundations. Beginning in 1948 Meggers and her late husband, Clifford Evans, excavated a chiefdom on Marajó, an island twice the size of New Jersey that sits like a gigantic stopper in the mouth of the Amazon. The Marajóara, they concluded, were failed offshoots of a sophisticated culture in the Andes. Transplanted to the lush trap of the Amazon, the culture choked and died.

Green activists saw the implication: development in tropical forests destroys both the forests and their developers. Meggers's account had enormous public impact—*Amazonia* is one of the wellsprings of the campaign to save rain forests.

Then Anna C. Roosevelt, the curator of archaeology at Chicago's Field Museum of Natural History, re-excavated Marajó. Her complete report, *Moundbuilders of the Amazon* (1991), was like the anti-matter

version of *Amazonia*. Marajó, she argued, was "one of the outstanding indigenous cultural achievements of the New World," a powerhouse that lasted for more than a thousand years, had "possibly well over 100,000" inhabitants, and covered thousands of square miles. Rather than damaging the forest, Marajó's "earth construction" and "large, dense populations" had *improved* it: the most luxuriant and diverse growth was on the mounds formerly occupied by the Marajóara. "If you listened to Meggers's theory, these places should have been ruined," Roosevelt says.

Meggers scoffed at Roosevelt's "extravagant claims," "polemical tone," and "defamatory remarks." Roosevelt, Meggers argued, had committed the beginner's error of mistaking a site that had been occupied many times by small, unstable groups for a single, long-lasting society. "[Archaeological remains] build up on areas of half a kilometer or so," she told me, "because [shifting Indian groups] don't land exactly on the same spot. The decorated types of pottery don't change much over time, so you can pick up a bunch of chips and say, 'Oh, look, it was all one big site!' Unless you know what you're doing, of course." Centuries after the conquistadors, "the myth of El Dorado is being revived by archaeologists," Meggers wrote last fall in the journal *Latin American Antiquity*, referring to the persistent Spanish delusion that cities of gold existed in the jungle.

The dispute grew bitter and personal; inevitable in a contemporary academic context, it has featured vituperative references to colonialism, elitism, and employment by the CIA. Meanwhile, Roosevelt's team investigated Painted Rock Cave. On the floor of the cave what looked to me like nothing in particular turned out to be an ancient midden: a refuse heap. The archaeologists slowly scraped away sediment, traveling backward in time with every inch. When the traces of human occupation vanished, they kept digging. ("You always go a meter past sterile," Roosevelt says.) A few inches below they struck the charcoal-rich dirt that signifies human habitation—a culture, Roosevelt said later, that wasn't supposed to be there.

For many millennia the cave's inhabitants hunted and gathered for food. But by about 4,000 years ago they were growing crops—perhaps as many as 140 of them, according to Charles R. Clement, an anthropological botanist at the Brazilian National Institute for Amazonian Research. Unlike Europeans, who planted mainly annual crops, the Indians, he says, centered their agriculture on the Amazon's unbelievably diverse assortment of trees: fruits, nuts, and palms. "It's tremendously difficult to clear fields with stone tools," Clement says. "If you can plant trees, you get twenty years of productivity out of your work instead of two or three."

Planting their orchards, the first Amazonians transformed large swaths of the river basin into something more pleasing to human beings. In a widely cited article from 1989, William Balée, the Tulane anthropologist, cautiously estimated that about 12 percent of the nonflooded Amazon forest was of anthropogenic origin—directly or indirectly created by human beings. In some circles this is now seen as a conservative position. "I basically think it's all human-created," Clement told me in Brazil. He argues that Indians changed the assortment and density of species throughout the region. So does Clark Erickson, the University of Pennsylvania archaeologist, who told me in Bolivia that the lowland tropical forests of South America are among the finest works of art on the planet. "Some of my colleagues would say that's pretty radical," he said, smiling mischievously. According to Peter Stahl, an anthropologist at the State University of New York at Binghamton, "lots" of botanists believe that "what the eco-imagery would like to picture as a pristine, untouched Urwelt [primeval world] in fact has been managed by

people for millennia." The phrase "built environment," Erickson says, "applies to most, if not all, Neotropical landscapes."

"Landscape" in this case is meant exactly—Amazonian Indians literally created the ground beneath their feet. According to William I. Woods, a soil geographer at Southern Illinois University, ecologists' claims about terrible Amazonian land were based on very little data. In the late 1990s Woods and others began careful measurements in the lower Amazon. They indeed found lots of inhospitable terrain. But they also discovered swaths of *terra preta*—rich, fertile "black earth" that anthropologists increasingly believe was created by human beings.

Terra preta, Woods guesses, covers at least 10 percent of Amazonia, an area the size of France. It has amazing properties, he says. Tropical rain doesn't leach nutrients from *terra preta* fields; instead the soil, so to speak, fights back. Not far from Painted Rock Cave is a 300-acre area with a two-foot layer of *terra preta* quarried by locals for potting soil. The bottom third of the layer is never removed, workers there explain, because over time it will re-create the original soil layer in its initial thickness. The reason, scientists suspect, is that *terra preta* is generated by a special suite of microorganisms that resists depletion. "Apparently," Woods and the Wisconsin geographer Joseph M. McCann argued in a presentation last summer, "at some threshold level ... dark earth attains the capacity to perpetuate—even *regenerate* itself—thus behaving more like a living 'super'-organism than an inert material."

In as yet unpublished research the archaeologists Eduardo Neves, of the University of São Paulo; Michael Heckenberger, of the University of Florida; and their colleagues examined *terra preta* in the upper Xingu, a huge southern tributary of the Amazon. Not all Xingu cultures left behind this living earth, they discovered. But the ones that did generated it rapidly—suggesting to Woods that *terra preta* was created deliberately. In a process reminiscent of dropping microorganism-rich starter into plain dough to create sourdough bread, Amazonian peoples, he believes, inoculated bad soil with a transforming bacterial charge. Not every group of Indians there did this, but quite a few did, and over an extended period of time.

When Woods told me this, I was so amazed that I almost dropped the phone. I ceased to be articulate for a moment and said things like "wow" and "gosh." Woods chuckled at my reaction, probably because he understood what was passing through my mind. Faced with an ecological problem, I was thinking, the Indians *fixed* it. They were in the process of terraforming the Amazon when Columbus showed up and ruined everything.

Scientists should study the microorganisms in *terra preta*, Woods told me, to find out how they work. If that could be learned, maybe some version of Amazonian dark earth could be used to improve the vast expanses of bad soil that cripple agriculture in Africa—a final gift from the people who brought us tomatoes, corn, and the immense grasslands of the Great Plains.

"Betty Meggers would just die if she heard me saying this," Woods told me. "Deep down her fear is that this data will be misused." Indeed, Meggers's recent *Latin American Antiquity* article charged that archaeologists who say the Amazon can support agriculture are effectively telling "developers [that they] are entitled to operate without restraint." Resuscitating the myth of El Dorado, in her view, "makes us accomplices in the accelerating pace of environmental degradation." Doubtless there is something to this—although, as some of her critics responded in the same issue of the journal, it is difficult to imagine greedy plutocrats "perusing the pages of *Latin American Antiquity* before deciding to

rev up the chain saws." But the new picture doesn't automatically legitimize paving the forest. Instead it suggests that for a long time big chunks of Amazonia were used nondestructively by clever people who knew tricks we have yet to learn.

I visited Painted Rock Cave during the river's annual flood, when it wells up over its banks and creeps inland for miles. Farmers in the floodplain build houses and barns on stilts and watch pink dolphins sport from their doorsteps. Ecotourists take shortcuts by driving motorboats through the drowned forest. Guys in dories chase after them, trying to sell sacks of incredibly good fruit.

All of this is described as "wilderness" in the tourist brochures. It's not, if researchers like Roosevelt are correct. Indeed, they believe that fewer people may be living there now than in 1491. Yet when my boat glided into the trees, the forest shut out the sky like the closing of an umbrella. Within a few hundred yards the human presence seemed to vanish. I felt alone and small, but in a way that was curiously like feeling exalted. If that place was not wilderness, how should I think of it? Since the fate of the forest is in our hands, what should be our goal for its future?

Novel Shores

Hernando de Soto's expedition stomped through the Southeast for four years and apparently never saw bison. More than a century later, when French explorers came down the Mississippi, they saw "a solitude unrelieved by the faintest trace of man," the nineteenth-century historian Francis Parkman wrote. Instead the French encountered bison, "grazing in herds on the great prairies which then bordered the river."

To Charles Kay, the reason for the buffalo's sudden emergence is obvious. Kay is a wildlife ecologist in the political-science department at Utah State University. In ecological terms, he says, the Indians were the "keystone species" of American ecosystems. A keystone species, according to the Harvard biologist Edward O. Wilson, is a species "that affects the survival and abundance of many other species." Keystone species have a disproportionate impact on their ecosystems. Removing them, Wilson adds, "results in a relatively significant shift in the composition of the [ecological] community."

When disease swept Indians from the land, Kay says, what happened was exactly that. The ecological ancien régime collapsed, and strange new phenomena emerged. In a way this is unsurprising; for better or worse, humankind is a keystone species everywhere. Among these phenomena was a population explosion in the species that the Indians had kept down by hunting. After disease killed off the Indians, Kay believes, buffalo vastly extended their range. Their numbers more than sextupled. The same occurred with elk and mule deer. "If the elk were here in great numbers all this time, the archaeological sites should be chock-full of elk bones," Kay says. "But the archaeologists will tell you the elk weren't there." On the evidence of middens the number of elk jumped about 500 years ago.

Passenger pigeons may be another example. The epitome of natural American abundance, they flew in such great masses that the first colonists were stupefied by the sight. As a boy, the explorer Henry Brackenridge saw flocks "ten miles in width, by one hundred and twenty in length." For hours the birds darkened the sky from horizon to horizon. According to Thomas Neumann, a consulting archaeologist in Lilburn, Georgia, passenger pigeons "were incredibly dumb and always roosted in vast hordes, so they were very easy to harvest." Because they were readily caught and good to eat, Neumann says, archaeological digs should find many pigeon bones in the pre-Columbian strata of Indian middens. But they aren't there. The mobs of birds in the history books, he says, were "outbreak populations—always a symptom of an extraordinarily disrupted ecological system."

Throughout eastern North America the open landscape seen by the first Europeans quickly filled in with forest. According to William Cronon, of the University of Wisconsin, later colonists began complaining about how hard it was to get around. (Eventually, of course, they stripped New England almost bare of trees.) When Europeans moved west, they were preceded by two waves: one of disease, the other of ecological disturbance. The former crested with fearsome rapidity; the latter sometimes took more than a century to quiet down. Far from destroying pristine wilderness, European settlers bloodily *created* it. By 1800 the hemisphere was chockablock with new wilderness. If "forest primeval" means a woodland unsullied by the human presence, William Denevan has written, there was much more of it in the late eighteenth century than in the early sixteenth.

Cronon's *Changes in the Land: Indians, Colonists, and the Ecology of New England* (1983) belongs on the same shelf as works by Crosby and Dobyns. But it was not until one of his articles was excerpted in *The New York Times* in 1995 that people outside the social sciences began to understand the implications of this view of Indian history. Environmentalists and ecologists vigorously attacked the anti-wilderness scenario, which they described as infected by postmodern philosophy. A small academic brouhaha ensued, complete with hundreds of footnotes. It precipitated *Reinventing Nature?* (1995), one of the few academic critiques of postmodernist philosophy written largely by biologists. *The Great New Wilderness Debate* (1998), another lengthy book on the subject, was edited by two philosophers who earnestly identified themselves as "Euro-American men [whose] cultural legacy is patriarchal Western civilization in its current postcolonial, globally hegemonic form."

It is easy to tweak academics for opaque, self-protective language like this. Nonetheless, their concerns were quite justified. Crediting Indians with the role of keystone species has implications for the way the current Euro-American members of that keystone species manage the forests, watersheds, and endangered species of America. Because a third of the United States is owned by the federal government, the issue inevitably has political ramifications. In Amazonia, fabled storehouse of biodiversity, the stakes are global.

Guided by the pristine myth, mainstream environmentalists want to preserve as much of the world's land as possible in a putatively intact state. But "intact," if the new research is correct, means "run by human beings for human purposes." Environmentalists dislike this, because it seems to mean that anything goes. In a sense they are correct. Native Americans managed the continent as they saw fit. Modern nations must do the same. If they want to return as much of the landscape as possible to its 1491 state, they will have to find it within themselves to create the world's largest garden.

NATIONAL GEOGRAPHIC MAGAZINE

Published: May 2007

America, Found and Lost

Much of what we learned in grade school about the New World encountered by the colonists at Jamestown is wrong. Four hundred years later, historians are piecing together the real story.

By Charles C. Mann

It is just possible that John Rolfe was responsible for the worms—specifically the common night crawler and the red marsh worm, creatures that did not exist in the Americas before Columbus. Rolfe was a colonist in Jamestown, Virginia, the first successful English colony in North America. Most people know him today, if they know him at all, as the man who married Pocahontas. A few history buffs understand that Rolfe was one of the primary forces behind Jamestown's eventual success. The worms hint at a third, still more important role: Rolfe inadvertently helped unleash a convulsive and permanent change in the American landscape.

Like many young English blades, Rolfe smoked—or, as the phrase went in those days, "drank"—tobacco, a fad since the Spanish had first carried back samples of *Nicotiana tabacum* from the Caribbean. Indians in Virginia also drank tobacco, but it was a different species, *Nicotiana rustica.* Virginia leaf was awful stuff, wrote colonist William Strachey: "poor and weak and of a biting taste." After arriving in Jamestown in 1610, Rolfe talked a shipmaster into bringing him *N. tabacum* seeds from Trinidad and Venezuela. Six years later Rolfe returned to England with his wife, Pocahontas, and the first major shipment of his tobacco. "Pleasant, sweet, and strong," as Rolfe's friend Ralph Hamor described it, Jamestown's tobacco was a hit. By 1620 the colony exported up to 50,000 pounds (23,000 kilograms) of it—and at least six times more a decade later. Ships bellied up to Jamestown and loaded up with barrels of tobacco leaves. To balance the weight, sailors dumped out ballast, mostly stones and soil. That dirt almost certainly contained English earthworms.

And little worms can trigger big changes. The hardwood forests of New England and the upper Midwest, for instance, have no native earthworms—they were apparently wiped out in the last Ice Age. In such worm-free woodlands, leaf litter piles up in drifts on the forest floor. But when earthworms are introduced, they can do away with the litter in a few months. The problem is that northern trees and shrubs beneath the forest canopy depend on that litter for food. Without it, water leaches away nutrients formerly stored in the litter. The forest becomes more open and dry, losing much of its understory, including tree seedlings.

Whether the night crawler and the red marsh worm actually first arrived on Rolfe's tobacco ships is not known. What is clear is that much of the northern forests in America were worm free until the Europeans arrived there, inadvertently importing earthworms on the root-balls of their plants or in the ballast of ships. The effects of this earthworm invasion have been slow to show themselves because the creatures don't spread rapidly on their own. "If they're born in your backyard, they'll stay inside the

fence their whole lives," says John Reynolds, editor of *Megadrilogica,* the premier earthworm journal. But over time, the effect on the ecosystem can be dramatic.

Jamestown is known for inaugurating the great American struggles over democracy (the colony established English America's first representative government) and slavery (it was the first English colony to use captured Africans). Rolfe's worms, as one might call them, point to another part of its history. The colonists did not come to the Americas alone. Instead they were accompanied by a great parade of insects, plants, mammals, and microorganisms. Some of the effects were almost invisible; others were enormous. Together with the newcomers' different ways of managing the land, these creatures literally changed the ground beneath the Indians' feet. Setting up camp on marshy Jamestown peninsula, the colonists were taking the first steps toward creating the American landscape we know today.

Two hundred and fifty million years ago the world contained a single landmass known to scientists as Pangaea. Geologic forces broke this vast expanse into pieces, sundering Eurasia and the Americas. Over time the two halves of the world developed wildly different suites of plants and animals. Columbus's signal accomplishment was, in the phrase of historian Alfred Crosby, to reknit the torn seams of Pangaea. After 1492, the world's ecosystems collided and mixed as European vessels carried thousands of species to new homes across the oceans. The Columbian exchange, as Crosby called it, is why there are tomatoes in Italy, oranges in Florida, chocolates in Switzerland, and hot peppers in Thailand. It is arguably the most important event in the history of life since the death of the dinosaurs.

For English America, Jamestown was the opening salvo in the Columbian exchange. In biological terms, it marked the point when *before* turns into *after.* And it began 400 years ago this month, on May 14, 1607, when 104 colonists disembarked on Jamestown peninsula, on the southern fringe of Chesapeake Bay.

Much of what we learned in grade school about the New World encountered by the colonists at Jamestown turns out to be wrong. In movies and textbooks the colonists are often depicted as arriving in a pristine forest of ancient trees, small bands of Indians gliding, silent as ghosts, beneath the canopy. But the idea that the English were "settlers" of land that was unsettled before they arrived is complete nonsense. In fact, three English ships landed in the middle of a small but rapidly expanding Indian empire called Tsenacomoco.

Three decades before, Tsenacomoco had been a collection of six separate chiefdoms. By the time the foreigners came from overseas, its paramount chief, Powhatan, had tripled its size to about 8,000 square miles (21,000 square kilometers) and more than 14,000 people. Wary, politically shrewd, ruthless when needed, Powhatan was probably in his 60s when the English landed—a "goodly old man, not yet shrinking" with age, according to colonist Strachey, "well beaten with many cold and stormy winters," but still "of a tall stature and clean limbs." His sphere of influence stretched from the Potomac to Cape Henry.

Most of Powhatan's people (known by the colonists as the Powhatan Indians) lived in villages of a few hundred inhabitants surrounded by large tracts of cleared land: cornfields and former cornfields. Except for defensive palisades, the landscape was unfenced. By a quirk of evolutionary history, North America had, except for dogs, no large domesticable mammals; its native species, such as bison and deer, could not be tamed. With no horses, cattle, sheep, goats, or chickens to tend, villagers had no need to enclose their fields.

Between the villages was the forest, splendid with chestnut and elm but hardly untouched. "It was touched, and sometimes heavily," says Donald Young, an ecologist at Virginia Commonwealth University in Richmond. In the fall, Indians burned the underbrush, keeping the forest so open and parklike, colonist John Smith wrote, that "a man may gallop a horse amongst these woods." With Indian villages dotting the region's many riverbanks, the Chesapeake Bay was a jumble of farm fields, marshes, deep forest, and secondary forest (young trees growing on abandoned plots). Jamestown peninsula was an example of the last; it had been cleared, perhaps for farm fields, a generation or two before the English arrived.

The new colony was a private enterprise funded by a group of venture capitalists called the Virginia Company. Much like investors in today's dot-com start-ups, the backers wanted a quick return. They believed, incorrectly, that the Chesapeake Bay region was laden, like Mexico and Peru, with vast stores of gold and silver. The goal was to acquire these precious metals as expeditiously as possible. Spain, too, believed that gold and silver could be found there. It had long ago claimed what is now the U.S. East Coast for itself and in 1570 had planted a mission a few miles north of Jamestown.

The local Indians wiped out that mission. English colonists who settled on Roanoke Island 110 miles (180 kilometers) south of Jamestown in the 1580s may also have met their end at the hands of a native group—very possibly the Powhatan. Nonetheless the Virginia Company directors worried more about protecting their investment from distant Spain than from the Indians. They instructed the colonists—their employees, in today's terms—to settle far from the ocean, "a hundred miles [160 kilometers] from the river's mouth," which would minimize the chance of sudden assault by Spanish ships. And they told them to make sure the settlement was close to a deepwater anchorage, so they could lay up "provisions with ease." In all they did, the directors warned, the colonists should act with "great care not to offend the naturals [Indians]."

Jamestown was the result. Not wanting to antagonize Powhatan, the newcomers—*tassantassas* (strangers), as the Indians called them—looked for uninhabited ground. Because native villages occupied all the good land upriver, the colonists ended up picking a site about 35 miles (55 kilometers) from the mouth of the James. It was a peninsula near a bend in the river, at a place where the current cut a deep channel so close to the shore that oceangoing ships could be moored to the trees.

Alas, there was a reason no Indians lived at Jamestown: It was not a good place to live. The English were like the last people moving into a subdivision—they ended up with the least desirable property. Their chosen site was marshy, mosquito-ridden, and without fresh water. Buckets could be dipped into the James, of course, but the water was potable only part of the year. During the summer, the river falls as much as 15 feet (5 meters). No longer pushed back by a big flow of fresh water, the salty water of the estuary spreads upstream, stopping right around Jamestown. Worse, sediments and organic wastes from the head of the river get trapped at the saltwater boundary. The colonists were drinking some of the dirtiest water in the James—"full of slime and filth," complained Jamestown president George Percy.

By the end of September, nearly half of the original 104 colonists had died. Percy attributed most of the deaths to "mere famine," but he was wrong, in the view of the late historical geographer Carville Earle. The river teemed with fish in the summer—especially big, meaty Atlantic sturgeon—and the English caught and ate them. (Archaeologists at Jamestown have uncovered remains from a sturgeon as long as 14 feet [4 meters].) Instead, Earle argued, the colonists were killed by "typhoid, dysentery, and perhaps salt poisoning." All are associated with contaminated water. During winter the water would have

cleared, but not in time to help the tassantassas. Many had been too sick that summer to tend the company gardens. Initially the strangers hoped to trade with the Indians for food while they spent their days hunting for gold, but the region was deep into a multiyear drought, and the Indians did not want to part with what little food they had. By January, only 38 colonists were alive—barely.

Within months, John Smith took charge of Jamestown. His wily, sometimes brutal diplomacy allowed the foreigners to extract enough food from Tsenacomoco villages to survive the next winter. This was quite a feat—with the arrival of two more convoys, the number of mouths at Jamestown had risen, even with all the deaths, to about 200. Despite his successes, Smith, a yeoman's son, managed constantly to irritate his social betters in the Virginia Company's leadership. Worse for the colony, he left for medical treatment in England in the fall of 1609. He had suffered terrible burns when a bag of gunpowder he had fastened around his waist accidentally ignited. In his absence, things deteriorated. That winter, the death toll again was high.

Although Jamestown was nearly defenseless, Powhatan didn't attack. For the first year or two of the colony's existence, he seems to have decided that the foreigners' trade goods—guns, axes, glass beads, and copper sheets, which the Indians prized much the way Europeans prized gold ingots—were worth giving up some not-very-valuable real estate. In addition, Powhatan was probably convinced that the tassantassas would die off without his assistance, suggests Helen Rountree, an emerita anthropologist at Old Dominion University, in Norfolk, and the most prominent historian of Tsenacomoco. He could sit back and wait; the invasion from abroad would end itself.

Things would get ugly before Powhatan was proved wrong. By the beginning of 1610, the settlers at Jamestown were dining on "dogs, cats, rats, and mice," Percy wrote, as well as the starch for their Elizabethan ruffs, which could be cooked into a kind of porridge. With famine "ghastly and pale in every face," some colonists stirred themselves to "dig up dead corpse[s] out of graves and to eat them." One man murdered his pregnant wife and "salted her for his food." When John Rolfe arrived that spring, only about 60 people at Jamestown had survived what was called "the starving time."

Rolfe himself barely made it to Virginia. Almost a year before—June 1609—nine ships had left England, carrying 500 new colonists, Rolfe among them. Not far from landfall, a hurricane slammed into the expedition. Rolfe's vessel twisted so much in the waves that the caulking popped from its seams. For three straight days every man aboard, many "stripped naked as men in galleys," worked pumps and bucket chains. The voyagers were near collapse when the ship ran aground on an unpeopled island in the Bermudas. For nine months, Rolfe and the other survivors recovered on the island, catching fish, wild hogs, and sea turtles and assembling two small boats from the wreckage of their ship. They staggered into Jamestown on May 24, 1610, a year after leaving London.

Appalled by what they found and with limited supplies, Rolfe's group quickly decided to abandon Jamestown. They loaded the skeleton-like survivors into boats, intending to set off for Newfoundland, where they would beg a ride home from fishing vessels that plied the Grand Banks. As they waited for the tide to turn for their departure, they saw three ships approaching. It was yet *another* convoy, this one amply supplied and containing a replacement governor and 150 more colonists. The old colonists, despondent, returned to the task of figuring out how to survive.

It wasn't easy. At least 6,000 people came to Virginia from England between 1607 and 1624. More than three out of four died.

The central mystery of Jamestown is why the badly led, often starving colonists were eventually able to prevail over the bigger, better-organized forces of the Powhatan empire. In other parts of the Americas, colonizers had their way smoothed for them, so to speak, because they landed in places that already had been devastated by Eurasian illnesses like smallpox, measles, and typhoid—diseases that had not existed in the Americas. When the Pilgrims came to Massachusetts in 1620, for instance, they established Plymouth village literally on top of an Indian village that had been emptied two years before by an epidemic (apparently spread by survivors of a French vessel that shipwrecked on Cape Cod). In Virginia, despite previous contact with Europeans, the Powhatan had somehow avoided any epidemics and were going strong when the Jamestown colonists arrived. Yet by the late 17th century, the Powhatan too had lost control of their land. What happened?

One answer emerging points to what historian Alfred Crosby calls "ecological imperialism." The tassantassas replaced or degraded so much of the native ecosystem that they made it harder and harder for the Indians to survive in their native lands. As the colonists bitterly came to realize that Virginia had no gold and that the Indians weren't going to selflessly provide them with all the food they needed, they began to mold the land to their needs. Unable to adapt to this foreign landscape, they transformed it into a place they could understand. In doing so, they unleashed what would become a multilevel ecological assault on North America. Their unlikely weapons in this initial phase of the campaign: tobacco, honeybees, and domestic animals.

Most historians think it unlikely that Pocahontas saved John Smith's life. Smith was sent off to explore the headwaters of the Chickahominy River in December 1607, in a canoe with two English companions and two Indian guides. One hope was that the river might be the entrance to the long-rumored passage between the Atlantic and Pacific Oceans. The expedition was intercepted by a force led by Opechancanough, Powhatan's powerful brother.

Opechancanough brought his captive to Powhatan, who lived on the north bank of the York River. In Smith's telling, the leader decided to execute him after a public feast. Executioners "being ready with their clubs to beat out his brains, Pocahontas, the king's dearest daughter," then perhaps 11 years old, suddenly rushed out and cradled Smith's head in her arms "to save him from death." Fondly indulging his daughter's crush, Powhatan commuted Smith's sentence and returned him to Jamestown with food.

Historians don't buy this account, published in 1624, not least because Smith also described his capture a few months after it happened, in a report not intended for publication, and said nothing about being saved by an Indian maiden. Overall, the two versions of Smith's Virginia adventures are similar, except the one intended for the bookstores presents the events with a melodramatic flourish. Being saved from death by a lady's intervention was a favorite motif in Smith's tales. True or not, the story of Smith's rescue has overshadowed a more important bit of history: Pocahontas actually did help save the colony—by marrying John Rolfe six years later.

Evidence suggests Pocahontas was a bright, curious, mischievous girl, one who, like all girls in Tsenacomoco, went without clothing until puberty. Her real name was Matoaka; Pocahontas was a teasing nickname that meant something like "little hellion." When Pocahontas visited Jamestown after Smith's return, Strachey remembered, she got the boys to turn cartwheels with her, "falling on their hands turning their heels upwards, whom she would follow, and wheel so her self naked as she was all the fort over."

The English appear to have liked the girl—but not enough to prevent them from abducting her in 1613. They demanded that Powhatan return the English guns he had acquired, but the leader refused to negotiate with people he must have regarded as criminals. Perhaps Pocahontas was angered by her father's refusal to ransom her. Perhaps she liked being treated royally by the English, who viewed her as a princess. Perhaps Pocahontas, by then a teenager, simply fell in love with one of her captors—decorous, pious, politically adept John Rolfe, who for his part seems to have truly fallen for her. In any case, she agreed to stay in Jamestown as Rolfe's bride.

Both Powhatan and Jamestown's leaders seem to have viewed Pocahontas's marriage as a de facto nonaggression treaty. As relations eased, the foreigners were given free rein to grow tobacco. In Tsenacomoco, the custom was for families to farm their plots and then let them go fallow when yields declined. Any land not currently being planted became common hunting or foraging grounds until needed again for farms. Rolfe and the other tassantassas found a loophole in the system. To them, the Indians' unfenced land looked unused—no matter that it was purposely kept open by burning, and constantly traversed by hunting and gathering parties. The English cleared this "vacant" land to plant tobacco, but instead of abandoning fields as they were depleted, gave them over to cattle and horses. Rather than cycling the land between farm and forest, they divided it into parcels and kept them in continuous agricultural use—permanently keeping prime farm and forage land away from the James River societies, pushing the Indians farther and farther away from the shore.

Tobacco fueled an addiction for more and more land. The Indians had long grown the crop, but only in small amounts, and in fields that mixed different plants. Driven by the English demand, the colonists covered big stretches of land with *N. tabacum.* Neither natives nor newcomers understood the environmental impact of growing it on a massive scale. "Tobacco has an almost unique ability to suck the life out of soil," says Leanne DuBois, the agricultural extension agent in James City County. "In this area, where the soils can be pretty fragile, it can ruin the land in a couple of years." Constantly wearing out their fields, the colonists cleared ever more forest, leaving behind sparse pastureland.

Even in their own villages and farm fields, the Indians couldn't escape the invasive species brought by the English—pigs, goats, cattle, and horses. Indians woke up to find free-range cows and horses romping through their fields, trampling the harvest. If they killed the beasts, gun-waving colonists demanded payment. To the English, the whole concept of a "civilized" landscape was one in which ownership of the land was signaled by fencing fields and raising livestock. After all, England had more domestic animals per capita than most other European nations. "They looked down on the Indians because they had no domestic animals," says Virginia DeJohn Anderson, a historian at the University of Colorado at Boulder. At first the imported animals didn't do well, not least because they were eaten by starving colonists. But during the peace after Pocahontas's marriage, they multiplied. Colonists quickly lost control of them.

The worst may have been the pigs. Smart, strong, constantly hungry, vicious when crossed, they ate nuts, fruits, shellfish, and corn, turning up the soil with their shovel-like noses in search of edible roots. Among these was tuckahoe, a starchy tuber the Indians relied on when times were hard and their corn crops failed. The pigs liked it, too. The natives found themselves competing for food with packs of feral pigs.

But the largest ecological impact may have been wreaked by a much smaller, seemingly benign domestic animal: the European honeybee. In early 1622, a ship arrived in Jamestown that was a living exhibit of the Columbian exchange. It was loaded with exotic entities for the colonists to experiment with:

grapevine cuttings, silkworm eggs, and beehives. Most bees pollinate only a few species; they tend to be fussy about where they live. European honeybees, promiscuous beasts, reside almost anywhere and pollinate almost anything in sight. Quickly, they swarmed from their hives and set up shop throughout the Americas.

The English imported the bees for honey, not to pollinate crops—pollination wasn't widely understood until the late 19th century—but feral honeybees pollinated farms and orchards up and down the East Coast anyway. Without them, many of the plants the Europeans brought with them wouldn't have proliferated. Georgia probably wouldn't have become the Peach State; Johnny Appleseed's trees might never have borne fruit; Huckleberry Finn might not have had any watermelons to steal. So critical to European success was the honeybee that Indians came to view it as a harbinger of invasion; the first sight of one in a new territory, noted French-American writer Jean de Crèvecoeur in 1782, "spreads sadness and consternation in all [Indian] minds."

The question arises: If the colonists were pushing Powhatan out of Tsenacomoco, why didn't he push back? Clearly the Indians were more numerous and understood the terrain better. They were also well armed—colonial matchlocks were less accurate than native bows and took longer to reload. One answer is that Powhatan was slow to realize the foreigners would not self-destruct after all. Year after year, they died by the scores, amply proving to him that the English didn't know how to survive in America. Yet new shiploads just kept coming. Although Powhatan sent representatives to London, he apparently didn't understand the implications of their reports of its dense population. England could keep replacing colonists, no matter how many died. By the time he realized this, Powhatan was an old and tired man who had lost his appetite for what would have been a bloody enterprise.

Yet this doesn't explain why his brother Opechancanough, who was distrustful of the tassantassas and took the reins after Powhatan's death in 1618, didn't simply destroy the colony. He did organize a violent surprise attack in 1622 that killed almost a third of the English, but despite ongoing skirmishes, he didn't follow up with another sustained assault for 22 years, by which time the colony was firmly established. Nor does it explain why adjacent Indian groups didn't strike the foreigners either. One possible reason is that, by then, the English hadn't just made the landscape inhospitable. It had turned deadly.

The first known Thanksgiving in English America was celebrated on December 4, 1619, at Berkeley Hundred, a brand-new plantation about 30 miles (50 kilometers) west of Jamestown. Thirty-eight fresh tassantassas had arrived there earlier that day with a deed awarding them title to 8,000 acres (3,200 hectares). (This transaction likely occurred without consulting the original inhabitants.) Like Jamestown, Berkeley Hundred was a private, for-profit enterprise backed by venture capitalists in England. The main order of business: Grow as much tobacco as possible. But the financial backers also watched out for their employees' spiritual welfare. The day of arrival, they instructed, should be "yearly and perpetually kept holy as a day of thanksgiving to Almighty God." After unloading their baggage, the tassantassas knelt in prayer on the cold shore.

History has not recorded where these kneeling men came from, but records suggest a substantial fraction—as much as a third—of the immigrants in Virginia before 1640 were from the marshes of southern and eastern England. In the 17th century, these areas were rampant with malaria. It was not unusual for 10 or 20 percent of the marsh population to die in a single year, according to Mary Dobson,

a medical historian. In contrast to the rest of England, burials outstripped baptisms during much of the 17th and 18th centuries. Little wonder people from these areas wanted to emigrate to the Americas.

But rather than escaping malaria, the colonists brought the disease with them, thanks to the marvelously complicated life cycle of the single-celled plasmodium parasite that causes it. It spends its early stages in the gut of several species in the *Anopheles* mosquito genus. When these mosquitoes bite people, plasmodia swim into their bodies. Once in their new home, the parasites transform themselves into tiny creatures called merozoites, which eventually pop out of red blood cells in synchronized assaults—every 48 hours for *Plasmodium vivax,* the species first introduced into the Americas. Reacting in frenzy to the attack, the body's immune system sets off waves of intense fever and chills.

This type of malaria rarely kills victims directly, but leaves them weak for months, until the body gradually fights it off. But *P. vivax* can hide for as long as five years in the liver of sufferers who appear to have run it out of their systems, producing full-blown malarial relapses every six to nine months. Others can have the disease but show no symptoms, turning people in seeming good health into carriers.

In theory, it would take only one such carrier to arrive at Jamestown and get bitten by one of the mosquito species that inhabit the East Coast to establish malaria in the entire continent. In this way, one or more colonists must have "infected" the New World's mosquitoes with the parasite for malaria. "It's a bit like throwing darts," said Andrew Spielman, the late Harvard professor of tropical public health. "Bring enough sick people in contact with enough mosquitoes, and sooner or later you'll hit the bull's-eye—you'll establish malaria."

By 1657 the colonial physician and politician John Winthrop (son of the famed, identically named governor of Massachusetts Bay Colony) was commonly encountering what we now know as malaria in the course of his work. According to Robert Charles Anderson, the genealogist who is transcribing Winthrop's medical journal, the disease was probably well established in the Massachusetts colony by 1640. Since many more early colonists went to Virginia than Massachusetts, malaria could have been stalking the Tidewater there as early as the 1620s. This is speculative, but not implausible. Once malaria has a chance to get into a place, said Spielman, "it usually gets in fast."

If malaria arrived early, it may help explain why Opechancanough never mounted a sustained fight against the colonists, even when it became a matter of survival to his people. Malaria effectively saps the vitality of entire regions. In England's malaria belt, marshlanders were routinely dismissed as stupid, apathetic, and fatalistic. Similar abuse was heaped on the settlers at Jamestown; Strachey was one of many who denounced what he saw as their propensity for "sloth, riot, and vanity." But at least England could ship in new colonists rapidly. The Indians could not. If a substantial fraction of their population was malarious, it would have limited their ability to attack the colonists. From the native point of view, it would have been as if the environment around them had suddenly become toxic.

No matter how the parasite was actually introduced to Virginia, we know that malaria spread throughout the East Coast, eventually playing a major part in the pageant of U.S. history. Without malaria, slaves would have been less desirable to southern planters: Most people from tropical Africa are resistant to the plasmodium parasite, the product of millennia of evolution in its presence. The disease became especially endemic in the Carolinas, where it crippled the army of British Gen. Charles Cornwallis during the Revolutionary War. England had by that time drained its marshes and largely been freed of malaria. Meanwhile, the colonists had become seasoned. "There was a big imbalance.

Cornwallis's army was simply melting away," says J. R. McNeill, an environmental historian at Georgetown University. McNeill takes pains to credit the bravery of the Revolution's leaders. But a critical role was played by what he wryly refers to as "revolutionary mosquitoes." Cornwallis surrendered, effectively ending the war, on October 19, 1781.

By then the Columbian exchange was in full swing. The Atlantic coast was dotted with monoculture fields devoted to such alien crops as wheat, rice, and West Indian tobacco. Black rats from Europe were devouring Indian corn stores from Maine to Florida. Meanwhile, European farmers were adopting New World plants like corn, potatoes, and tomatoes; chili peppers, unknown in Asia before Columbus, were on their way to taking over Indian, Thai, and Chinese kitchens.

No longer maintained by Indian burning, the shrinking forests of the East would become choked with underbrush—the overgrown, uninhabited "wilderness" celebrated by Thoreau. In the 1800s, the great grasslands of the Midwest, once kept open by native burning, began filling with trees. With the Indians vanquished by disease, some archaeologists believe, species they had formerly hunted, such as the passenger pigeon, experienced a population explosion.

On the James River, where the process began, land-clearing sped runoff and increased the river flow, sweeping aside the mats of vegetation that lined its banks in Powhatan's day. With its plantations, tobacco fields, and rolling meadows, the landscape of the Chesapeake Bay had been utterly transformed. It looked more like England than it had when Jamestown began, but it wasn't at all the same. Four centuries ago, the English didn't discover a New World—they created one.

Native Intelligence

The Indians who first feasted with the English colonists were far more sophisticated than you were taught in school. But that wasn't enough to save them

By Charles C. Mann

SMITHSONIAN MAGAZINE DECEMBER 2005

On March 22, 1621, a Native American delegation walked through what is now southern New England to meet with a group of foreigners who had taken over a recently deserted Indian settlement. At the head of the party was an uneasy triumvirate: Massasoit, the sachem (political-military leader) of the Wampanoag confederation, a loose coalition of several dozen villages that controlled most of southeastern Massachusetts; Samoset, sachem of an allied group to the north; and Tisquantum, a distrusted captive, whom Massasoit had brought along only reluctantly as an interpreter.

Massasoit was an adroit politician, but the dilemma he faced would have tested Machiavelli. About five years before, most of his subjects had fallen before a terrible calamity. Whole villages had been depopulated. It was all Massasoit could do to hold together the remnants of his people. Adding to his problems, the disaster had not touched the Wampanoag's longtime enemies, the Narragansett alliance to the west. Soon, Massasoit feared, they would take advantage of the Wampanoag's weakness and overrun them. And the only solution he could see was fraught with perils of its own, because it involved the foreigners—people from across the sea.

Europeans had been visiting New England for at least a century. Shorter than the Natives, oddly dressed and often unbearably dirty, the pallid foreigners had peculiar blue eyes that peeped out of bristly, animal-like hair that encased their faces. They were irritatingly garrulous, prone to fits of chicanery and often surprisingly incompetent at what seemed to Indians like basic tasks. But they also made useful and beautiful goods—copper kettles, glittering colored glass and steel knives and hatchets—unlike anything else in New England. Moreover, they would exchange these valuable items for the cheap furs that the Indians used as blankets.

Over time, the Wampanoag, like other Native societies in coastal New England, had learned how to manage the European presence. They encouraged the exchange of goods, but would allow their visitors to stay ashore only for brief, carefully controlled excursions. Those who overstayed their welcome were forcefully reminded of the limited duration of Indian hospitality. At the same time, the Wampanoag fended off Indians from the interior, preventing them from trading directly with the foreigners. In this way the shoreline groups had put themselves in the position of classic middlemen, overseeing both European access to Indian products and Indian access to European products. Now, reversing long-standing policy, Massasoit had decided to permit the newcomers to stay for an unlimited time—provided they formally allied with the Wampanoag against the Narragansett.

Tisquantum, the interpreter, had turned up at Massasoit's home a year and a half before. He spoke fluent English, because he had lived for several years in Britain. But Massasoit worried that in a crisis Tisquantum might side with the foreigners. Samoset—the third member of the triumvirate—had appeared a few weeks before, having hitched a ride from his home in Maine on an English ship that was plying the coast. Because Samoset also spoke a little English, Massasoit had first sent him, not Tisquantum, to meet with the foreigners.

On March 17, 1621, Samoset had walked unaccompanied and unarmed into the circle of rude huts in which the British were living. The colonists saw a robust, erect-postured man wearing only a loincloth; his straight black hair was shaved in front but flowed down his shoulders behind. To their amazement, this almost naked man greeted them in broken but understandable English. He left the next morning with a few presents, returning a day later with five "tall proper men"—in colonist Edward Winslow's words—with three-inch black stripes painted down the middle of their faces. The two sides talked inconclusively, each checking out the other, for a few hours.

Now, on the 22nd, with Massasoit and the rest of the Indian company hidden from view, Samoset and Tisquantum walked into the foreigners' ramshackle base. They spoke with the colonists for about an hour. Then, Massasoit and the rest of the Indian party suddenly appeared at the crest of a nearby hill, on the banks of a stream. Alarmed, the Europeans withdrew to a hill on the other side of the stream, where they had emplaced their few cannons behind a half-finished stockade. A standoff ensued.

Finally Winslow exhibited the decisiveness that later led to his selection as colony governor. Wearing a full suit of armor and carrying a sword, he waded through the stream and offered himself as a hostage. Massasoit's brother took charge of Winslow, and then Massasoit crossed the water himself, followed by Tisquantum and 20 of Massasoit's men, all unarmed. The colonists took the sachem to an unfinished house and gave him some cushions on which to recline. Both sides shared some of the foreigners' homemade moonshine and settled down to talk, Tisquantum translating.

Massasoit wore the same deerskin shawls and leggings as his fellows and, like them, had covered his face with bug-repelling oil and reddish purple dye. Around his neck hung a pouch of tobacco, a long knife and a thick chain of the prized white shell beads called wampum. In appearance, Winslow wrote afterward, he was "a very lusty man, in his best years, an able body, grave of countenance, and spare of speech." The Europeans, who had barely survived the previous winter, were in much worse shape. Half of the original colony now lay underground beneath wooden markers painted with death's heads; most of the survivors were malnourished. The meeting between the Wampanoag and the English colonists marked a critical moment in American history. "A friendly indian"

“A Friendly Indian”

The foreigners called their colony Plymouth; they themselves were the famous Pilgrims. As schoolchildren learn, at that meeting the Pilgrims obtained the services of Tisquantum, usually known as Squanto. In the 1970s, when I attended high school, a popular history text was America: Its People and Values. Nestled among colorful illustrations of colonial life was a succinct explanation of Tisquantum’s role:

A friendly Indian named Squanto helped the colonists. He showed them how to plant corn and how to live on the edge of the wilderness. A soldier, Capt. Miles Standish, taught the Pilgrims how to defend themselves against unfriendly Indians.

My teacher explained that maize was unfamiliar to the Pilgrims and that Squanto had demonstrated the proper way to plant it—sticking the seed in little heaps of dirt, accompanied by beans and squash that would later twine themselves up the tall stalks. And he told the Pilgrims to fertilize the soil by burying fish alongside the maize seeds. Following this advice, my teacher said, the colonists grew so much maize that it became the centerpiece of the first Thanksgiving. In our slipshod fashion, we students took notes.

The story in America: Its People and Values isn’t wrong, so far as it goes. But the impression it gives is entirely misleading.

Tsquantum was critical to the colony’s survival. He moved to Plymouth after the crucial meeting and spent the rest of his life there, during which time he indeed taught the Pilgrims agricultural methods, though some archaeologists believe Tisquantum picked up the idea of fish fertilizer from European farmers, who had used the technique since medieval times. But America: Its People and Values never explains why he so enthusiastically helped the people who had invaded his homeland. Skipping over such complexities is understandable in a book with limited space. The lack of attention, however, is symptomatic of a larger failure to consider Indian motives, or even that Indians might have motives.

Much the same is true of the alliance Massasoit negotiated with Plymouth. From the Indian point of view, why did he do it? The alliance was successful from the short-run Wampanoag perspective, for it helped to hold off the Narragansett. But it was a disaster from the point of view of New England Indian society as a whole, because it ensured the survival of Plymouth Colony, which spearheaded the great wave of British immigration to New England. All of this was absent not only from my high-school textbooks, but from the academic accounts they were based on.

This omission dates back to the Pilgrims themselves, who ascribed the lack of effective Native resistance to the will of God. “Divine providence,” the colonist Daniel Gookin wrote, favored “the quiet and peaceable settlement of the English.” Later writers tended to attribute European success to European technology. In a contest where only one side had rifles and cannons, historians said, the other side’s motives were irrelevant. By the end of the 19th century, the Indians of the Northeast were thought of as

rapidly fading background details in the saga of the rise of the United States—"marginal people who were losers in the end," as James Axtell of the College of William and Mary dryly put it in an interview with me. Vietnam War-era denunciations of the Pilgrims as imperialist or racist simply replicated the error in a new form. Whether the cause was the Pilgrim God, Pilgrim guns or Pilgrim greed, Native losses were foreordained; Indians could not have stopped colonization, in this view, and they hardly tried.

But beginning in the 1970s, historians grew dissatisfied with this view. "Indians were seen as trivial, ineffectual patsies," Neal Salisbury, a historian at Smith College, told me. "But that assumption—a whole continent of patsies—simply didn't make sense." Salisbury and other researchers tried to peer through the colonial records to the Indian lives beneath. Their work fed a tsunami of inquiry into the interactions between Natives and newcomers in the era when they faced each other as relative equals.

"When you look at the historical record, it's clear that Indians were trying to control their own destinies," Salisbury said. "And often enough they succeeded"—only to learn, as all peoples do, that the consequences were not what they expected.

The Dawnland

More than likely Tisquantum was not the name he was given at birth. In that part of the Northeast, tisquantum referred to rage, especially the rage of manitou, the world-suffusing spiritual power at the heart of coastal Indians' religious beliefs. When Tisquantum approached the Pilgrims and identified himself by that sobriquet, it was as if he had stuck out his hand and said, Hello, I'm the Wrath of God.

Nor did Tisquantum think of himself as an "Indian," any more than the inhabitants of the same area today would call themselves "Western Hemisphereans." As Tisquantum's later history would make clear, he regarded himself first and foremost as a citizen of Patuxet, one of the dozen or so shoreline settlements in what is now eastern Massachusetts and Rhode Island that made up the Wampanoag confederation. The Wampanoag, in turn, were part of an alliance with the Nauset, which comprised some 30 groups on Cape Cod, and the Massachusett, several dozen villages clustered around Massachusetts Bay. All of these people spoke variants of Massachusett, a member of the Algonquian language family, the biggest in eastern North America at the time. In Massachusett, the name for the New England shore was the Dawnland, the place where the sun rose. The inhabitants of the Dawnland were the People of the First Light.

Ten thousand years ago, when Indians in Mesoamerica and Peru were inventing agriculture and coalescing into villages, New England was barely inhabited, for the excellent reason that it had been covered until relatively recently by an ice sheet a mile thick. As the sheet retreated, people slowly moved in, though the area long remained cold and uninviting, especially along the coastline. Because rising sea levels continually flooded the shore, marshy Cape Cod did not fully lock into its contemporary

configuration until about 1000 b.c. By that time the Dawnland had evolved into something more attractive: an ecological crazy quilt of wet maple forests, shellfish-studded tidal estuaries, thick highland woods, mossy bogs of cranberries and orchids, complex snarls of sandbars and beachfront, and fire-swept stands of pitch pine—"tremendous variety even within the compass of a few miles," in the phrase of ecological historian William Cronon.

By the end of the first millennium A.D.,agriculture was spreading rapidly and the region was becoming a patchwork of communities, each with its preferred terrain, way of subsistence and cultural style. Scattered about the many lakes, ponds and swamps of the cold uplands were small, mobile groups of hunters and gatherers. Most had recently adopted agriculture or were soon to do so, but cultivated crops were still a secondary source of food, a supplement to the wild products of the land. New England's major river valleys, by contrast, held large, permanent villages, many nestled in constellations of suburban hamlets and hunting camps. Because extensive fields of maize, beans and squash surrounded every home, these settlements sprawled along the Connecticut, Charles and other river valleys for miles, one town bumping up against the other. Along the coast, where Tisquantum and Massasoit lived, villages tended to be smaller and looser, though no less permanent.

Unlike the upland hunters, the Indians on the rivers and coastline did not roam the land; most shoreline families would move a 15-minute walk inland, to avoid direct exposure to winter storms and tides. Each village had its own distinct mix of farming and foraging—one adjacent to a rich oyster bed might plant maize purely for variety, whereas a village just a few miles away might subsist almost entirely on its harvest, filling great underground storage pits each fall. Each community was constantly "joining and splitting like quicksilver in a fluid pattern within its bounds," wrote Kathleen J. Bragdon, an anthropologist at the College of William and Mary. Such settlements, she remarked, have "no name in the archaeological or anthropological literature."

"Sweet, Toothsome, and Hearty"

In the Wampanoag confederation, one of these quicksilver communities was Patuxet, where Tisquantum was born at the end of the 16th century. Tucked into the great sweep of Cape Cod Bay, Patuxet sat on a low rise above a small harbor, jigsawed by sandbars and so shallow that children could walk from the beach hundreds of yards into the water before it reached their heads. To the west, maize hills marched across the sandy hillocks in parallel rows. Beyond the fields, a mile or more away from the sea, rose a forest of oak, chestnut and hickory, open and park-like, the underbrush kept down by expert annual burning. "Pleasant of air and prospect," as one English visitor described the area, Patuxet had "much plenty both of fish and fowl every day in the year." Runs of spawning Atlantic salmon, shortnose sturgeon, striped bass and American shad filled the harbor. But the most important fish harvest came in late spring, when the herring-like alewives swarmed the fast, shallow stream that cut through the village.

Tisquantum's childhood wetu (home) was formed from arched poles lashed together into a dome covered in winter by tightly woven rush mats and in summer by thin sheets of chestnut bark. A fire burned constantly in the center, the smoke venting through a hole in the roof. The wetu's multiple layers of mats, which trapped insulating layers of air, were "warmer than our English houses," sighed the colonist William Wood. It was also less leaky than the typical English wattle-and-daub house. Wood did not conceal his admiration for the way Indian mats "deny entrance to any drop of rain, though it come both fierce and long."

Around the edge of the house were low beds, sometimes wide enough for a whole family to sprawl on together; they were usually raised about a foot from the floor, platform-style, and piled with mats and furs. Going to sleep in the firelight, young Tisquantum would have stared up at shadows of hemp bags and bark boxes hanging from the rafters. Voices would skirl up in the darkness: one person singing a lullaby, then another person, until everyone was asleep. In the morning, when he woke, big, egg-shaped pots of corn-and-bean mash would be on the fire, simmering with meat, vegetables or dried fish to make a slow-cooked dinner stew. Outside, he would hear the thuds of the large mortars and pestles in which women crushed dried maize into nokake, a flour-like powder "so sweet, toothsome, and hearty," colonist Gookin marveled, "that an Indian will travel many days with no other but this meal." According to one modern reconstruction, Dawnland diets at the time averaged about 2,500 calories a day, a higher level than those in famine-racked Europe.

Pilgrim writers universally reported that Wampanoag families were close and loving—more so than English families, some thought. Europeans in those days tended to view children as moving straight from infancy to adulthood around the age of 7 and often thereupon sent them out to work. Indian parents, by contrast, regarded the years before puberty as a time of playful development, and they kept their offspring close by until they married. Boys like Tisquantum explored the countryside, swam in the ponds at the south end of the harbor, and played a kind of soccer with a small leather ball; in summer and fall they camped out in huts in the fields, weeding the maize and chasing away birds. Archery began at age 2. By adolescence, boys would make a game of shooting at each other and dodging the arrows.

The primary goal of Dawnland education was molding character. Men and women were expected to be brave, hardy, honest and uncomplaining. Chatterboxes and gossips were frowned upon. "He that speaks seldom and opportunely, being as good as his word, is the only man they love," Wood reported. When Indian boys came of age, they spent an entire winter alone in the forest, equipped only with a bow, hatchet and knife. These methods worked, Wood added. "Beat them, whip them, pinch them, punch them, if [the Indians] resolve not to flinch for it, they will not."

Tisquantum's regimen was probably even more rigorous than that of his friends, according to Smith College's Salisbury, for it seems that he was selected to become a pniese, a kind of counselor-bodyguard to the sachem. To master the art of ignoring pain, prospective pniese had to subject themselves to such experiences as running barelegged through brambles. And they fasted often, to learn self-discipline.

After spending their winter in the woods, pniese candidates came back to an additional test: drinking bitter gentian juice until they vomited, repeating this process over and over.

Patuxet, like its neighboring settlements, was governed by a sachem who enforced laws, negotiated treaties, controlled foreign contacts, collected tribute, declared war, provided for widows and orphans, and allocated farmland. The Patuxet sachem owed fealty to the great sachem in the Wampanoag village to the southwest, and through him to the sachems of the allied confederations of the Nauset in Cape Cod and the Massachusett around Boston. Meanwhile, the Wampanoag were rivals and enemies of the Narragansett and Pequots to the west and the Abenaki to the north.

Sixteenth-century New England was home to 100,000 Native people or more, a figure that was slowly increasing. Most of them lived in shoreline communities, where rising numbers were beginning to change agriculture from an option to a necessity. These larger settlements required more centralized administration; natural resources like good land and spawning streams, though not scarce, needed to be managed. In consequence, boundaries between groups were becoming more formal. Sachems, given more power and more to defend, pushed against each other harder. Political tensions were constant. Coastal and riverine New England, according to the archaeologist and ethnohistorian Peter Thomas, was "an ever-changing collage of personalities, alliances, plots, raids and encounters which involved every Indian [settlement]."

Armed conflict was frequent but brief and mild by European standards. The catalyst was usually the desire to avenge an insult or gain status, not conquest. Most battles consisted of lightning guerrilla raids in the forest. Attackers slipped away as soon as retribution had been exacted. Losers quickly conceded their loss of status. Women and children were rarely killed, though they were sometimes abducted and forced to join the victors. Captured men were often tortured. Now and then, as a sign of victory, slain foes were scalped, and in especially large clashes, adversaries might meet in the open, as in European battlefields, though the results, Roger Williams, founder of Rhode Island Colony, noted, were "farre less bloudy, and devouring then the cruell Warres of Europe."

Inside the settlement was a world of warmth, family and familiar custom. But the world outside, as Thomas put it, was "a maze of confusing actions and individuals fighting to maintain an existence in the shadow of change."

And that was before the Europeans showed up.

“Beautiful of Stature and Build”

British fishing vessels may have reached Newfoundland as early as the 1480s and areas to the south soon after. In 1501, just nine years after Columbus’ first voyage, the Portuguese adventurer Gaspar Corte-Real abducted more than 50 Indians from Maine. Examining the captives, Corte-Real found to his astonishment that two were wearing items from Venice: a broken sword and two silver rings.

The earliest written description of the People of the First Light was by Giovanni da Verrazzano, the Italian mariner-for-hire commissioned by the king of France in 1523 to discover whether one could reach Asia by rounding the Americas to the north. Sailing north from the Carolinas, he observed that the coastline everywhere was “densely populated,” smoky with Indian bonfires; he could sometimes smell the burning hundreds of miles away. The ship anchored in Narragansett Bay, near what is now Providence. Verrazzano was one of the first Europeans the Natives had seen, perhaps even the first, but the Narragansett were not intimidated. Almost instantly, 20 long canoes surrounded the visitors. Cocksure and graceful, the Narragansett sachem leapt aboard: a tall, long-haired man of about 40 with multicolored jewelry dangling about his neck and ears, “as beautiful of stature and build as I can possibly describe,” Verrazzano wrote.

His reaction was common. Time and time again Europeans described the People of the First Light as strikingly healthy specimens. Eating a nutritious diet, working hard but not broken by toil, the people of New England were taller and more robust than those who wanted to move in. Native New Englanders, in William Wood’s view, were “more amiable to behold (though [dressed] only in Adam’s finery) than many a compounded fantastic [English dandy] in the newest fashion.”

Evidence suggests that Indians tended to view Europeans with disdain. The Huron in Ontario, a chagrined missionary reported, thought the French possessed “little intelligence in comparison to themselves.” Europeans, Indians told other Indians, were physically weak, sexually untrustworthy, atrociously ugly and just plain smelly. (The British and French, many of whom had not taken a bath in their entire lives, were amazed by the Indian interest in personal hygiene.) A Jesuit reported that the “savages” were disgusted by handkerchiefs: “They say, we place what is unclean in a fine white piece of linen, and put it away in our pockets as something very precious, while they throw it upon the ground.”

For 15 days Verrazzano and his crew were the Narragansett’s honored guests—though the Indians, Verrazzano admitted, kept their women out of sight after hearing the sailors’ “irksome clamor” when females came into view. Much of the time was spent in friendly barter. To the Europeans’ confusion, their steel and cloth did not interest the Narragansett, who wanted to swap only for “little bells, blue crystals, and other trinkets to put in the ear or around the neck.” On Verrazzano’s next stop, the Maine coast, the Abenaki did want steel and cloth—demanded them, in fact. But up north the friendly welcome had vanished. The Indians denied the visitors permission to land; refusing even to touch the Europeans, they passed goods back and forth on a rope over the water. As soon as the crew members

sent over the last items, the locals began “showing their buttocks and laughing.” Mooned by the Indians! Verrazzano was baffled by this “barbarous” behavior, but the reason for it seems clear: unlike the Narragansett, the Abenaki had long experience with Europeans.

A Small Ship

During the century after Verrazzano, Europeans were regular visitors to the Dawnland, usually fishing, sometimes trading, occasionally kidnapping Natives as souvenirs. (Verrazzano had grabbed one himself, a boy of about 8.) By 1610, one historian has estimated, Britain alone had about 200 vessels operating off Newfoundland and New England; hundreds more came from France, Spain, Portugal and Italy. With striking uniformity, these travelers reported that New England was thickly settled and well defended. In 1605 and 1606 Samuel de Champlain visited Cape Cod, hoping to establish a French base. He abandoned the idea. Too many people already lived there. A year later the British nobleman Ferdinando Gorges tried to found a community in Maine. It began with more people than the Pilgrims’ later venture in Plymouth and was better organized and supplied. Nonetheless, the local Indians, numerous and well armed, killed 11 colonists and drove the rest back home within months.

Tisquantum probably saw Champlain and other European visitors, but the first time Europeans are known to have affected his life was in the summer of 1614. A small ship hove to, sails a-flap. Out to meet the crew went the Patuxet. Almost certainly the sachem would have been of the party; he would have been accompanied by his pniese, including Tisquantum. The strangers’ leader was a sight beyond belief: a stocky man, even shorter than most foreigners, with a voluminous red beard that covered so much of his face that he looked to Indian eyes more beast than human. This was Capt. John Smith of Pocahontas fame. According to Smith, he had lived an adventurous and glamorous life. As a youth, he claimed, he had served as a privateer, after which he was captured and enslaved by the Turks. He escaped and awarded himself the rank of captain in the army of Smith. Later he actually became captain of a ship and traveled to North America several times. On this occasion he had sailed to Maine with two ships, intending to hunt whales. The party spent two months chasing the beasts but failed to catch a single one. The fallback plan, Smith wrote later, was “Fish and Furs.” He assigned most of the crew to catch and dry fish in one ship while he sailed up and down the coast with the other, bartering for furs.

Despite Smith’s peculiar appearance, Tisquantum and his fellows apparently gave him a tour, during which he admired the gardens, orchards and maize fields, and the “great troupes of well-proportioned people” tending them. At some point a quarrel occurred and bows were drawn, Smith said, “fortie or fiftie” Patuxet surrounding him. His account is vague, but it seems likely that the Indians were hinting at a limit to his stay. In any case, the visit ended cordially enough, and Smith returned to Maine and then England. He had a map drawn of what he had seen, persuaded Prince Charles to look at it, and curried favor with him by asking him to award British names to all the Indian settlements. Then he put the maps in the books he wrote extolling his adventures. In this way Patuxet acquired its English name, Plymouth, and the region became known as New England.

Smith left his lieutenant, Thomas Hunt, behind in Maine to finish loading the other ship with dried fish. Without consulting Smith, Hunt decided to visit Patuxet, and, once there, he invited some Indians to come aboard. The thought of a summer day on the foreigners' vessel must have been tempting. Several dozen villagers, Tisquantum among them, canoed to the ship. Without warning or pretext the sailors tried to shove them into the hold. The Indians fought back. Hunt's men swept the deck with small-arms fire, creating "a great slaughter." At gunpoint, Hunt forced 19 survivors, including Tisquantum, belowdecks, then sailed with them to Europe, stopping only once, at Cape Cod, where he kidnapped seven Nauset.

In Hunt's wake, the outraged sachems of the Wampanoag and Nauset confederacies vowed not to let foreigners rest on their shores again. Because of the "worthlesse" Hunt, lamented Gorges, the would-be colonizer of Maine, "a warre [was] now new begunne between the inhabitants of those parts, and us." Despite European guns, the Indians' greater numbers, entrenched positions, knowledge of the terrain and superb archery made them formidable adversaries. About two years after Hunt's offenses, a French ship wrecked at the tip of Cape Cod. Its crew built a rude shelter with a defensive wall made from poles. The Nauset, hidden outside, picked off the sailors one by one until only five were left. They captured the five and sent them to groups victimized by European kidnappers. Another French vessel anchored in Boston Harbor at about the same time. The Massachusett killed everyone aboard and set the ship afire.

"God's Good Providence"

The Pilgrims had refused to hire the experienced John Smith as a guide, on the theory that they could simply use the maps in his book. In consequence, as Smith later crowed, the hapless Mayflower spent several frigid weeks scouting Cape Cod for a good place to land, during which time many colonists became sick and died. Landfall at Patuxet did not end their problems. The colonists had intended to produce their own food, but had neglected to bring any cows, sheep, mules or horses. (They may have had pigs.) To be sure, the Pilgrims had intended to make most of their livelihood not by farming but by catching fish for export to Britain. But the only fishing gear the Pilgrims brought was useless in New England. Only half of the 102 people on the Mayflower made it through the first winter.

How did even that many survive? In his history of Plymouth Colony, Governor William Bradford himself provides one answer: robbing Indian houses and graves. The Mayflower hove to first at Cape Cod. An armed company of Pilgrims staggered out. Eventually they found a deserted Indian habitation. The newcomers—hungry, cold, sick—dug open burial sites and ransacked homes, looking for underground stashes of food. After two days of nervous work, the company hauled ten bushels of maize back to the Mayflower, carrying much of the booty in a big metal kettle the men had also stolen. "And sure it was God's good providence that we found this corn," Winslow wrote, "for else we know not how we should have done."

The Pilgrims' lack of preparation was typical. Expeditions from France and Spain were usually backed by the state, and generally staffed by soldiers accustomed to hard living. English voyages, by contrast, were almost always funded by venture capitalists who hoped for a quick cash-out. Decades after first touching the Americas, London's venture capitalists still had not figured out that New England is colder than Britain despite being farther south. Even when they focused on a warmer place like Virginia, they persistently selected as colonists people ignorant of farming; the hope of fleeing religious persecution uppermost in their minds, the Pilgrims, alas, were an example. Multiplying the difficulties, the would-be colonizers were arriving in the middle of a severe, multiyear drought. Jamestown and the other Virginia forays survived on Indian charity—they were "utterly dependent and therefore controllable," Karen Ordahl Kuppermann, a New York University historian, has written. The same held true for the adventurers in Plymouth.

Inexperienced in agriculture, the Pilgrims were also not woodspeople. Huddled in their half-built village that first terrible winter, the colonists rarely saw the area's inhabitants, except for the occasional shower of brass- or claw-tipped arrows. After February, glimpses and sightings became more frequent. Scared, the Pilgrims hauled five small cannons from the Mayflower and emplaced them in a defensive fortification. But after all the anxiety, their first contact with Indians went surprisingly well. Within days Tisquantum came to settle among them. And then they heard his stories.

No record survives of Tisquantum's journey across the Atlantic, but Hunt—John Smith's renegade subordinate, who had kidnapped Tisquantum and more than a score of his fellows— would have tied or chained and jammed the Indians into whatever dark corner of the hull was available. Presumably they were fed from the ship's cargo of dried fish. Smith took six weeks to cross the Atlantic to England. There is no reason to think Hunt went any faster. The only difference was that he took his ship to Málaga, on Spain's Mediterranean coast. There he intended to sell all of his cargo, including the human beings.

In fact, Hunt managed to sell only a few of his captives before local Roman Catholic priests seized the rest—the Spanish Church vehemently opposed brutality toward Indians. (In 1537 Pope Paul III had proclaimed that "Indians themselves indeed are true men" and should not be "deprived of their liberty" and "reduced to our service like brute animals.") The priests intended to save both Tisquantum's body, by preventing his enslavement, and his soul, by converting him to Christianity, though it is unlikely they succeeded in the latter endeavor. In any case, this resourceful man convinced them to let him return home—or, rather, to try to return. He got to London, where he stayed with John Slany, a shipbuilder with investments in Newfoundland. Slany apparently taught Tisquantum English while maintaining him as a curiosity in his town house. Meanwhile, Tisquantum persuaded him to arrange for passage to North America on a fishing vessel. He ended up in a tiny British fishing camp on the southern edge of Newfoundland. It was on the same continent as Patuxet, but between them were a thousand miles of rocky coastline and the Micmac and Abenaki alliances, which were at war with one another.

Because traversing this unfriendly territory would be difficult, Tisquantum began looking for a ship to take him to Patuxet. He praised New England bounty to Thomas Dermer, one of Smith's subordinates, who was then staying in the same camp. Dermer contacted Ferdinando Gorges, who despite his previous failures retained his interest in the Americas, and with Tisquantum sailed back to England and met with Gorges. Gorges provided Dermer with a fresh ship, and after touching land in Maine, they set out in May 1619 for Massachusetts.

The Europeans' Secret Weapon

What Tisquantum saw on his return stunned him. From southern Maine to Narragansett Bay, the coast was empty—"utterly void," Dermer reported. What had once been a line of busy communities was now a mass of tumbledown homes and untended fields overrun by blackberries. Scattered among the houses and fields were skeletons bleached by the sun. Gradually Dermer's crew realized they were sailing along the border of a cemetery 200 miles long and 40 miles deep. Patuxet had been hit with special force. Not a single person remained.

Looking for his kinsfolk, Tisquantum led Dermer on a melancholy march inland. The settlements they passed lay empty to the sky but full of untended dead. Finally, Tisquantum's party encountered some survivors, a handful of families in a shattered village. These people sent for Massasoit, who appeared, Dermer wrote, "with a guard of fiftie armed men"—and a captive French sailor, a survivor of the Cape Cod shipwreck. Massasoit told Tisquantum what had happened.

One of the shipwrecked French sailors had learned enough Massachusett to inform his captors before dying that God would destroy them for their misdeeds. The Nauset scoffed at the threat. But the Europeans carried a disease, and they bequeathed it to their jailers. Based on accounts of the symptoms, the epidemic was probably of viral hepatitis, likely spread by contaminated food, according to a study by Arthur E. Spiess, of the Maine Historic Preservation Commission, and Bruce D. Spiess, of the Medical College of Virginia. The Indians "died in heapes as they lay in their houses," the merchant Thomas Morton observed. In their panic, the recently infected fled from the dying, unknowingly carrying the disease with them to neighboring communities. Behind them the dead were "left for crows, kites, and vermin to prey upon." Beginning in 1616, the pestilence took at least three years to exhaust itself and killed up to 90 percent of the people in coastal New England.

Massasoit had directly ruled a community of several thousand people and held sway over a confederation of as many as 20,000. Now his group was reduced to 60 people and the entire confederation to fewer than a 1,000. Both the Indians and the Pilgrims believed that sickness reflected the will of celestial forces. The Wampanoag, wrote Salisbury, the Smith historian, came to the obvious conclusion: "their deities had allied against them."

Similarly, Governor Bradford is said to have attributed the plague to “the good hand of God,” which “favored our beginnings” by “sweeping away great multitudes of the natives...that he might make room for us.” Indeed, more than 50 of the first colonial villages in New England were located on Indian communities emptied by disease. The epidemic, Gorges said, left the land “without any [people] to disturb or appease our free and peaceable possession thereof, from when we may justly conclude, that GOD made the way toe effect his work.”

Much as the Lisbon earthquake of 1755, which killed tens of thousands, prompted spiritual malaise across Europe, the New England epidemic shattered the Wampanoag’s sense that they lived in balance with an intelligible world. On top of that, the massive death toll created a political crisis. Because the hostility between the Wampanoag and the neighboring Narragansett had restricted contact between them, the disease had not spread to the latter. Now Massasoit’s people were not only beset by loss, they were in danger of subjugation.

After learning about the epidemic, the distraught Tisquantum returned with Dermer to southern Maine—the home he had been trying to find no longer existed. But he couldn’t stay with the Europeans, either. He ended up returning to Massachusetts on foot—the long, risky journey through war-torn territory that he had wanted to avoid. Almost inevitably, Tisquantum was seized on his journey home, perhaps because of his association with the hated Europeans, and sent to Massasoit as a captive.

Once again, Tisquantum tried to talk his way out of a jam, filling Massasoit’s ears with tales of the English, their cities and powerful technology. Tisquantum said, according to a colonist who knew him, that if Massasoit “Could make [the] English his Friends then [any] Enemies yet weare to[o] strong for him”—in other words, the Narragansett—“would be Constrained to bowe to him.” Massasoit demurred, apparently keeping Tisquantum in a kind of house arrest. Within a few months, word came that a party of English had settled at Patuxet. The Wampanoag observed them as they suffered through the first punishing winter. Eventually Massasoit concluded that he should ally with them—compared to the Narragansett, they were the lesser of two evils. Still, only when the need for a translator became unavoidable did he allow Tisquantum to meet the Pilgrims.

Massasoit told the Pilgrims that he was willing to leave them in peace (a bluff, one assumes, since driving them away would have taxed his limited resources). But in return he wanted the colonists’ assistance with the Narragansett. To the Pilgrims, Massasoit’s motive for the deal was obvious: the Indian leader wanted guns. “He thinks we may be [of] some strength to him,” Winslow said later, “for our pieces [guns] are terrible to them.”

From today’s perspective, though, it seems likely that Massasoit had a subtler plan. He probably wanted more to confront the Narragansett with the unappetizing prospect of attacking one group of English people at the same time that their main trading partners were other English people. Faced with the

possibility of disrupting their favored position as middlemen, the Narragansett might think twice before staging such an incursion. If this interpretation is correct, Massasoit was trying to incorporate the Pilgrims into the web of Native politics. Not long before, he had expelled foreigners who stayed too long in Wampanoag territory. But with the entire confederation now smaller than one of its former communities, the best option seemed to be to allow the Pilgrims to remain. It would turn out to be a drastic, even fatal, decision.

First Thanksgiving

Tisquantum worked hard to prove his value to the Pilgrims. He was so successful that when some anti-British Indians abducted him, the colonists sent out a military expedition to get him back. Never did the newcomers ask themselves why he might be making himself essential. But from the Pilgrims' accounts of their dealings with him, the answer seems clear: the alternative to staying in Plymouth was returning to Massasoit and renewed captivity.

Recognizing that the colonists would be unlikely to keep him around forever, Tisquantum decided to gather together the few Native survivors of Patuxet and reconstitute the old community at a site near Plymouth. More ambitious still, he hoped to use his influence on the English to make this new Patuxet the center of the Wampanoag confederation, thereby stripping the sachemship from Massasoit. To accomplish these goals, as Governor Bradford later recounted, he intended to play the Indians and English against each other.

The scheme was risky, not least because the ever-suspicious Massasoit had sent one of his pniese, Hobamok, to Plymouth as a monitor. Sometimes Hobamok and Tisquantum worked together, as when the pair helped the Pilgrims negotiate a treaty with the Massachusett to the north. They also helped establish a truce with the Nauset of Cape Cod after Governor Bradford agreed to pay back the losses caused by the colonists' earlier grave robbing.

By fall the settlers' situation was secure enough that they held a feast of thanksgiving. Massasoit showed up with "some ninety men," Winslow later recalled, most of them with weapons. The Pilgrim militia responded by marching around and firing their guns in the air in a manner intended to convey menace. Gratified, both sides sat down, ate a lot of food and complained about the Narragansett. Ecce Thanksgiving.

All the while, Bradford wrote, Tisquantum "sought his own ends and played his own game." Covertly he tried to persuade other Wampanoag that he could better protect them against the Narragansett than Massasoit. In case of attack, Tisquantum claimed, he could respond with as many Indian troops—plus the Pilgrims. To advance his case, Tisquantum told other Indians that the foreigners had "buried in the

ground" a cache of the agent that had caused the epidemic and that he could manipulate them into unleashing it.

Even as Tisquantum attempted to foment distrust of Massasoit among the Indians, he told the colonists that Massasoit was going to double-cross them by leading a joint attack with the Narragansett on Plymouth. Then he tried tricking the Pilgrims into attacking the sachem.

In the spring of 1622 Tisquantum went with a delegation of Pilgrims to the Massachusett in Boston Harbor. Minutes after they departed, according to Bradford, one of the surviving Patuxet "in seeming great fear" informed the settlers that the Narragansett and Massasoit were planning to attack. Apparently Tisquantum believed that the colonists, upon hearing this news, would rise up and kill Massasoit. Since Tisquantum was away, his hands would seem clean. Instead, everything went awry. Upon hearing the news of an impending attack, Bradford ordered the firing of a cannon to call back the delegation, including Tisquantum. Meanwhile Hobamok, who had acquired some English, indignantly denied the rumor. Then in a move that Tisquantum had not anticipated, Bradford sent Hobamok's wife to Massasoit's home to find out what he was up to. She reported that "all was quiet." When Massasoit found out about the plot, he demanded that the Pilgrims send Tisquantum to him for a quick execution.

Bradford refused; Tisquantum's language skills were too vital. Tisquantum is one of my subjects, Massasoit said. You Pilgrims have no jurisdiction over him. And he offered a load of furs to sweeten the deal. When the colony still would not surrender Tisquantum, Winslow wrote, Massasoit sent a messenger with a knife and told Bradford to lop off Tisquantum's hands and head. To make his displeasure even clearer, he summoned Hobamok home and cut off all contact with the Pilgrims. Nervous, the colonists began building defensive fortifications. Between mid-May and mid-July, their crops withered for lack of rain. Because the Wampanoag had stopped trading with them, the Pilgrims would not be able to supplement their harvest.

Now a marked man, Tisquantum was unable to take a step outside of Plymouth without an escort. Nonetheless, he accompanied Bradford on a trip to southeast Cape Cod to negotiate another pact. They were on the way home when Tisquantum suddenly became sick. He died after a few days.

In the next decade tens of thousands of Europeans came to Massachusetts. Massasoit shepherded his people through the wave of settlement, and the pact he signed with Plymouth lasted for more than 50 years. Only in 1675 did one of his sons, angered by the colonists' laws, launch what was perhaps an inevitable attack. Indians from dozens of groups joined in. The conflict, brutal and sad, tore through New England.

The Europeans won. Historians attribute part of the victory to Indian unwillingness to match the European tactic of massacring whole villages. Another reason was manpower—by then the colonists outnumbered the Natives. Groups like the Narragansett, which had been spared by the epidemic of 1616, had been crushed by a smallpox epidemic in 1633. A third to half of the remaining Indians in New England died of European diseases. The People of the First Light could avoid or adapt to European technology but not to European germs. Their societies were destroyed by weapons their opponents could not control and did not even know they possessed.

Read more: https://www.smithsonianmag.com/history/native-intelligence