Despite some significant achievements by the Incas in road and bridge construction, the Americans had not developed very diverse transportation technology. The Old World systems showed a much wider array of travel techniques using a variety of animals and contraptions as well as oceangoing vehicles. As in the case of architecture, Indian transportation systems offered little to the remainder of the world.

It should be equally clear that every explorer, conquistador, and settler who arrived in America used the existing transportation systems, which proved well suited for their needs and the requirements of the terrain and climate. Despite the many self-serving and self-glorifying accounts of brave adventures written by white explorers and pioneers, America was by no stretch of the imagination an overgrown continent through which the Europeans had to hack their way searching for new settlements. Over tens of thousands of years, Indians had already opened the land, built roads or paths, and developed a system of canoes and small boats to reach every corner and crevice of the Americas from the Bering Straits to Tierra del Fuego.

AA14AA WHEN WILL AMERICA BE DISCOVERED?



The old Yuqui woman jerked her head up toward me and stared blindly into my face. As flies

crawled across her eyes and drank from the only moist place left on her body, her left hand scratched habitually at the lice and filth encrusted into her hair. No one knew her age, but she was the oldest survivor of a band of Yuquis living in the rain forest of the southern Amazon region. Most of her life she had wandered through the forest with her fellow Yuquis following the same culture as unknown generations had done before them. She had lived most of her life without knowledge of whites or other outsiders except that they lurked on the edges of her forest world. Like the evil spirits of the dead, the whites brought disease and death to the Yuquis, the real people.

Not until 1968 did her band make its first contact with a white, when the Protestant missionaries Bob and Mary Garland arrived in their world. In time the small band settled around the base camp of the missionaries on the Chimore River, and they wandered less and less to hunt. Anthropologist Allyn Stearman raced to record their way of life as it dissolved around her. The missionaries taught them to grow a few crops and helped them to hunt more efficiently and to use canoes. They taught them to make fire so that they would no longer have to raid another band each time their fire was lost, and they helped the women in

childbirth rather than letting them disappear alone into the jungle to bear their babies as had been their tradition.

Had this woman not been contacted by the missionaries she most assuredly would have been dead long before I came across her. If the lumbermen had not captured or killed her in their periodic shootouts with the Yuquis, then perhaps the coca growers or the ranchers would have seized her in a raid and made her a cook and prostitute for the mestizo workers. Even if she had been spared all of these indignities from outsiders and managed to live alone with her band, the group would have deserted her along the trail as soon as she became too ill to travel. As nomads who traveled strictly by foot, they never developed the knowledge of how to deal with the infirm or elderly. Anyone unable to walk through the jungle was left to die alone.

Now she sits deserted all day beneath a mosquito net in her hut wrapped in a filthy rag of a dress. She lost her sight, her hearing deteriorated, and she grew too weak to walk or crawl. Gradually she became deranged and delirious. The missionaries feed her and care for her most basic needs, but her own relatives who live nearby have no idea what to do for her. In their harsh jungle life, they never had to minister to anyone like this.

When I appeared at her net with the missionary, her bony hand reached out, groping for food. She clutched my arm, and her jagged fingernails scratched my hand as her cool but dry skin rubbed against mine with a sound like sandpaper against bark. She mumbled a few words that were incoherent to me, but the missionary said she was just naming foods and uttering the names of relatives, some living and some dead. Finally in defeat, she withdrew her hand, her jaw dropped, oblivious to the gnats crawling in and out of her mouth, and she seemed to return to the stupor and the scratching that occupied most of her dying weeks.

There was nothing heroic about the poor old woman. She was now at the end of her days, and all she sought was another morsel of food, some water, and some relief from the heat and the insects that plagued her now as they had all her life. Like so many Indians today from Canada to Chile, she seemed to be the truly wretched of the earth, the abandoned, the abused, the suffering who merited nothing but pity or charity from outsiders.

She lay dying as a miserable outcast from the contemporary American society that had gradually and persistently consumed her land over the past five hundred years.

This dying woman contrasted painfully with the image of the Indians as the world's greatest farmers and pharmacists, as the noble savage of Rousseau or the practical administrators who inspired Benjamin Franklin. I could not help but wonder why, if these people were really so great, they had fallen so low and been so oppressed. If they could build great cities and roads, why couldn't they defend themselves from the waves of Europeans who washed across their land?

Even though the Indian civilizations surpassed the Old World in a few areas, they lagged behind in others. The Indians developed superior agricultural skills and technology, and they surpassed the Old World in their pharmacology. They had far more sophisticated calendars than the Europeans, and the Indians of Mexico had a mathematical system based on place numbers superior to the numerical systems then in use by the Spaniards.

In their exhaustive attention to agriculture, medicine, mathematics, and religion, the Indians neglected the domestication of animals, which proved so decisive for the Old World civilizations. Because farmers in Europe, Asia, and Africa were so much less efficient in growing crops, they relied extensively on eggs, milk, cheese, and dozens of other animal products as well as on the meat of these animals. This made their Old World diet no better than that of the Americans, but it gave the people who domesticated animals a distinct advantage in that they easily learned to harness animal energy in place of human energy. The Europeans arrived in America with strong horses to help men in battle as well as oxen to pull heavy carts laden with supplies and cows and goats to give protein-rich milk to marching armies of soldiers and later to hordes of settlers.

The Indians built an elaborate civilization on human energy, but the Old World had thoroughly exploited animal energy sources that helped them in their endeavors. Additionally, the people of the Old World had begun tapping inanimate energy sources in ways that foreshadowed the coming industrial revolution. The sophisticated use of ships and sails, of windmills and waterwheels,

and of cannons and gunpowder gave them a decisive advantage over the Indians.

All of these skills made the invaders better soldiers and gave them better instruments of war. Indian metallurgy lacked the variety of the Old World's and was directed mostly toward decoration rather than tools of production or war. The European invaders, however, had learned to make steel into swords and lances and to cast metal cannons, which they mounted on wheels to be pulled by animals. The Indians still fought with arrows and spears tipped with stone, and they had no war machine more sophisticated than a simple atlatl or spear thrower.

Together with their animals and machines, the Europeans brought horrendous epidemic diseases that had been unknown to the New World. These diseases traveled through the Indian population faster than through the European. By the time the Europeans arrived in Tenochtitlán or Cuzco or on the plains of North America, their microbes had preceded them and thoroughly decimated and weakened the native population.

The Indian civilizations crumbled in the face of the Old World not because of any intellectual or cultural inferiority. They simply succumbed in the face of disease and brute strength. While the American Indians had spent millennia becoming the world's greatest farmers and pharmacists, the people of the Old World had spent a similar period amassing the world's greatest arsenal of weapons. The strongest, but not necessarily the most creative or the most intelligent, won the day.

The inevitable defeat of Indian groups such as the Yuqui seemed so overwhelming and so final that in the process we have overlooked the contributions that they made to the world. They mined the gold and silver that made capitalism possible. Working in the mines and mints and in the plantations with the African slaves, they started the industrial revolution that then spread to Europe and on around the world. They supplied the cotton, rubber, dyes, and related chemicals that fed this new system of production. They domesticated and developed the hundreds of varieties of corn, potatoes, cassava, and peanuts that now feed much of the world. They discovered the curative powers of quinine, the anesthetizing ability of coca, and the potency of a thousand other drugs, which made possible modern medicine and pharmacology.

The drugs together with their improved agriculture made possible the population explosion of the last several centuries. They developed and refined a form of democracy that has been haphazardly and inadequately adopted in many parts of the world. They were the true colonizers of America who cut the trails through the jungles and deserts, made the roads, and built the cities upon which modern America is based.

Over the past five hundred years, human beings have sculpted a new worldwide society, a new political and economic order as well as a new demographic and agricultural order. Indians played the decisive roles in each step to create this new society. Sometimes they acted as prime movers, other times they played equal roles with a set of actors, and sometimes they were mere victims. But in all cases they acted as necessary although not sufficient causes. Somewhere in the telling of modern history, the writing of the novels, the construction of textbooks and instructional programs, attention drifted away from the contribution of the Indians to the heroic stories of explorers and conquistadores, the moral lessons of missionaries, the political struggles of the colonists, the great and impersonal movements of European history, the romance of the cowboy. The modern world order came to be viewed as the product of European, not American, history. The Americans became bit players, and only their role as pathetic victims remained visible.

The Indians, such as the woman crouched before me, disintegrated into peripheral people. They became little more than beggars on the world scene, pleading for food, for the redress of land and treaty rights, for some attention. In ignoring the Indian cultures, however, we are doing far more than merely slighting the American Indians of their earned place in history. We may be hurting ourselves because of what we have all lost.

In staring at that ancient woman from the time before the white man came, I could not help but wonder what practical knowledge we were losing with her impending death. Through grubbing in the woods did she know of some plant that might serve as a key to feeding the starving masses in the tropics? From poking in ponds and bogs did she know of a concoction that might cure multiple sclerosis? From countless nights under the stars did she know of some weather-forecasting device that we had missed, or

did she know something about the anatomy of the night birds that helped them to see through the dark? Had she incorporated something into her diet that prevented stomach cancer? Did her language have the capacity to express some idea more easily than ours, or could it help in the writing of new computer codes? She lived in an environment that few people in the world have ever been able to survive. What knowledge did she have that made that possible? How did she survive for so long in a place that would kill most of us within days? Soon after my visit the old woman died, and now we may never know.

When she died a treasure of information went with her, for she was one of the last Yuquis to live their traditional life. In losing her and the Yuqui culture, we lose more than just a small band of people. We lose a whole world view, for each culture creates the world in a different way with unique knowledge, unique words, and unique understandings. While most of this cultural knowledge may be of no importance to us today, we have no idea what value it may yet hold for our children in generations to come. For centuries our ancestors saw no value in the potato or rubber or the Huron concoction of vitamin C to cure scurvy, but in time all of these came to have important roles to play.

The world has yet to utilize fully the gifts of the American Indians. Hundreds of plants such as amaranth and quinoa are hardly even known, much less fully utilized. Who knows how many more plants might be out there waiting to serve humans? We still do not understand the complex mathematical systems of the Mayas and the sophisticated geometric science of the Aztecs. Who knows what completely different systems of computation and calculation now lie buried in the adobe of Arizona or beneath the rocks of Inkallajta? The civilizations of Mexico and Guatemala developed a more accurate calendar than the one used in Europe, but it took decades of work for us to understand its superiority. Who knows what additional knowledge they had about the stars, the planets, the comets, and who knows how much knowledge still lies locked in the stone monuments yet to be discovered in the jungles of Guatemala or Belize?

We often know even less about the millions of American Indians surviving today, speaking their language and preserving at least some of their traditional cultural knowledge. The Quechuas of Bolivia, the Crees of Canada, the Guaranis of Paraguay, the Yanomamos of Venezuela, the Hopis of the United States, the Zapotecs of Mexico, the Sumus of Nicaragua, the Guajiros of Colombia, the Shuars of Ecuador, the Mayas of Guatemala, the Cunas of Panama, the Shavantes of Brazil, and a thousand other Indian nations are not dead. They are only ignored.

In the five hundred years since Columbus's voyage to America, the people of the world have benefited greatly from the American Indians, but the world may have lost even more than it gained. Some information that died with the old Yuqui woman and with the hundreds of exterminated tribes, nations, and cities may be lost forever. Some of it may be retrieved by coming generations of scholars who have the opportunity to study our past. Sadly, however, we know much more about the building of the pyramids of Egypt, thousands of miles and years from us, than we know about the pyramid builders of the Mississippi. We know more about the language of the long-gone Hittites than we do about the still-living Quechua speakers descended from the Incas. We know more about the poetry of the ancient Chinese than about the poems of the Nahuatls. We can decipher the clay tablets of Mesopotamia better than we can the stone tablets of Mesoamerica. We understand the medical practices of ancient Babylon better than those of the living Dakotas. We understand more about the interpreeding of the Angles and the Saxons than we do about the mixing of the Indians in America with the European and African immigrants. We know more about the Greeks' mythological tribe of Amazons than we know about the dying Yuquis of the Amazon. The history and culture of America remains a mystery, still terra incognita after five hundred years.

Columbus arrived in the New World in 1492, but America has yet to be discovered.