

The Impact of Infectious Disease in the New World

"It is often said that in the centuries after Columbus landed in the New World on 12 October, 1492, more native North Americans died each year from infectious diseases brought by the European settlers than were born." (6) The decimation of people indigenous to the Americas by diseases introduced by European invaders is unprecedented. While it is difficult to accurately determine the population of the pre-Columbian Americas, scholars estimate the number to have been between 40 and 50 million people. The population in Mexico alone in 1519 is believed to have been approximately 30 million. By 1568, that number was down to 3 million inhabitants. Although there were other causes for the population reduction such as "alcoholism, warfare, genocide, cultural disruption, and declines in fertility", it is now known that disease played a central role in the depopulation of the Americas. But how is it that these native peoples harbored virtually no immunity to the European diseases? What were these diseases and how did they come to be so feared? Who introduced them to this New World? How did this biological disaster affect the social structure of the Indians? This brief will attempt to answer the preceding questions.

How is the presence or absence of disease in the New World determined? Archeologists are able to determine if a society or individual fell prey to disease by examining teeth, bones, coprolites (feces), and artistic depictions. Through the excavations of burial mounds, scientists have discovered that certain afflictions existed even before the white man landed. "Missing limbs, skin diseases, blindness, cleft palate, clubfoot, "dental disease, parasites, arthritis, and tuberculosis are all thought to have existed in pre-Columbian America. However, tracing epidemiology in the 15th century is difficult because so little was done to identify and classify diseases and their symptoms during this time period. One might say that the New World was "ripe" for the onslaught of hitherto unknown diseases due to several demographic shifts prior to 1492. These are parallel to shifts that occurred in Europe such as the creation of large urban areas. Since city planning wasn't what it is today, cities were overcrowded, sewers were nonexistent or inefficient, and disease carrying vermin multiplied. This created a welcome mat for infectious disease in addition to the general uncleanliness of the population and the great number of transient people such as soldiers, students, thieves and the mentally ill.

Another factor leading to the assault of disease on medieval Europe was the domestication of large mammals. These animals were the origins of some of the most cursed afflictions of the time. Smallpox is a derivative of cowpox, measles of canine distemper, and influenza of hog diseases. "At first, neither young or old were spared. After generations, susceptible individuals were eliminated and resistant survivors dominated the gene pool. Diseases went from epidemics to childhood ills." (6) It was in this form that diseases were carried to the New World by unsuspecting conquistadors, to a population that had experienced its' own shifts to largely urban and sedentary lifestyles that become fertile ground for such an

unseemly weapon of destruction.

"Smallpox made its American debut in 1519, when it struck the Caribbean island of Santo Domingo, killing up to half of the indigenous population. From there outbreaks spread across the Antilles islands, onto the Mexican mainland, through the Isthmus of Panama and into South America." (2) Some of the other diseases that followed this path were measles, plagues (bubonic and pulmonary), gonorrhoea (from soldiers raping native women), mumps, typhoid, and cholera. Two African diseases, malaria and yellow fever, also came to Central America probably because of the ideal weather conditions in this region.

Prior to 1492, the Americas harbored relatively few infectious diseases. It is believed that the New World lived in virtual biological isolation from the rest of the planet due to the absence of domesticated animals and because of the path in which the Indians predecessors traveled. We know from origins of disease in Europe, that domesticated animals were to blame for the start of many epidemics. The New World lacked domesticated animals due to the extinction of large mammals, with which to draw from in the last ice age. Also, the remaining large mammals were not suitable for domestication for one reason or another. At the time of migration across the North American land bridge, cattle and sheep were still not utilized by society and therefore were not a cause for the spread of disease.

It is also believed that the path of migration across Beringia created a type of "germ filter" thanks to the harsh Arctic climate that killed off any bacteria or disease carriers such as worms or mosquitoes. In addition, the remoteness of clusters of migrants created a natural quarantine. By the time one group fell prey to an infectious disease they were unable to travel the great distances to infect other groups thereby extinguishing the disease. "While the New World had its native infections, including Chagas and Carrion's diseases, trichinosis, tapeworm, and perhaps syphilis, few were deadly, and none (with the possible exception of syphilis), seriously threatened whole communities of European colonists." (6) The impact that this biological isolation had on the conquest of the Americas is obvious. Along with the weapons and horses that the Europeans brought to conquer the New World came disease. This was by far the most horrific instrument of destruction. After returning to Tenochtitlan from defeated a Spanish mission sent to test him and bringing with him only 1250 Spaniards and 8000 allied Tlaxcallan warriors, Cortes attacked the Aztecs which had pinned down the itinerant lieutenant left to govern them. His forces outnumbered and overcome by the Aztecs, he retreated and hours later Tenochtitlan was being ravaged by the previously unknown smallpox. It is believed that one of the soldiers picked up on the way back to Tenochtitlan by Cortes was suffering from smallpox. This disease wiped out Aztec leaders and warriors and subsequently cleared the path for Cortes to retake the city of 1.5 million. This victory was clearly not attributable to advanced weaponry, horses, or military genius but rather disease. Upon returning to the city, Cortes chronicler Bernal

Diaz wrote, "'I solemnly swear that all the houses and stockades in the lake were full of heads and corpses. It was the same in the streets and courts...We could not walk without treading on the bodies and heads of dead Indians. Indeed, the stench was so bad that no one could endure it...and even Cortes was ill from the odors which assailed his nostrils.'" (2)

Indeed it is from these first hand accounts, not skeletal remains, which provide us with the most evidence of destruction caused by disease. These authors include Las Casas, Father Acuna, and Diaz del Castillo.

Before long the smallpox epidemic spread all over Central and South America. Infected natives, yet to develop symptoms, would flee their villages and travel to other villages carrying the disease with them. "...that any Indian who received news of the Spaniards could also have easily received the infection." (2) The reason that smallpox traveled so fast is because it could live in a dormant state on blankets and clothing or be transmitted by human breath. The incubation period was a long 10-14 days and because of this unsuspecting traders carried the virus all over the New World. "In general, the epidemics moved from east to west, loosely following the extent of European-American Indian contact:" (4) This was compounded by the high population densities of large Inca and Aztec cities and a more sedentary lifestyle for the Indians.

By the time Pizarro and his conquistadors reached Peru in the 1520's, the Incas had already suffered from the ravages of smallpox. The epidemic left their leader dead with no clear successors which caused political unrest and the civilization was split into two easily defeated armies. One Spanish contemporary wrote at the time, "Had the land not been divided, we would not have been able to enter or win." (1) Clearly, the reason the Europeans were so successful in their campaign against the native populations despite being outnumbered was because of disease. Not only did disease result in military defeat but also enabled the Europeans to usurp property left behind by dead Indians and consequently fill the empty space with their own colonists.

The spread of disease in the New World contributed to the decay of the culture there. Indians became too weak to harvest food or care for their young. It is believed that the Indians became depressed by the upheaval caused by recent events and became complacent and suicidal. There was a large scale abandonment of traditions such as marriage customs, which became difficult to observe because of the scarcity of marriage partners. Survivors of dying tribes banded together and formed new tribes. And the most lasting effect was the undermining of the Indian religions that caused the large-scale conversions for which the Spanish missionaries had hoped. "The defeats suffered by indigenous peoples always had a religious dimension-the traditional gods seemed to have lost their power to save their worshipers' lives. The argument that these abandoned then accepted whatever awaited them at the hands of their conquerors is however, the subject of continuing debate." (3) The Indians were devastated. Their devastation was evident by the writings of the time.

"Great was the stench of death. After our fathers and grandfathers succumbed, half the people fled to the fields. The dogs and vultures devoured the bodies. The mortality was terrible. Your grandfathers died, and with them died the son of the king and his brothers and kinsmen. So it was that we became orphans, oh, my sons! So we became when we were young. All of us were thus. We were born to die!(1)

One disease that may have originated in the New World is syphilis. Syphilis is named after a character in a poem written by Giraolamo Fracastoro in 1530 about a Greek shepherd Syphilis, who offended the goddess Venus and was punished.

The term venereal disease comes from the name Venus. There are three theories concerning the origin of syphilis:

1. Syphilis originated completely in the New World and was transmitted by Columbus' men to the Old World in 1493.

2. That syphilis was documented in Europe only after the discovery of the New World and that it already existed in the Americas is a complete coincidence.

3. Syphilis existed in Europe prior to 1492 but was not the venereal strain but rather a milder strain. Most information about the origin of syphilis supports the first theory, that syphilis was a New World disease and was transmitted sexually to the invading Spanish by Indian women. For example, most knowledge about syphilis after 1492 was mostly contained to the Spanish ports of Seville and Lisbon which were gateways to and from the New World. This would implicate that sailors coming from the Americas were treated here. There was consequently a leadership of Spanish and Portuguese physicians in the area of knowledge and therapy for syphilis. Also, there was no concrete name for syphilis in Europe before 1493. Symptoms that are similar to this form of venereal disease were widely referred to as leprosy, which was used to identify any disfiguring disease.

In addition, there were no writings about syphilis. On the contrary hundreds of Indian tribes had names for syphilis and evidence of it's pre-Columbian existence is found in skeletal remains. In addition, several historical accounts support the New World origin theory. Gonzalo Fernandez de Oviedo and Bartolome de Las Casas claimed syphilis was in the New World for a long time before discovery and that few were spared from this cursed disease. Dr. Ruy Diaz de Isla claims he treated Columbus' crew members upon returning from Hispaniola and that this disease was not known in Europe before then. Dr. Diaz de Isla should have known. He was the leading authority on syphilis in Europe, being a syphilis specialist in Lisbon from 1495-1521. He wrote, "'there is not a village in all Europe with a hundred inhabitants in which ten persons have not died(of syphilis) and a third of the people have not been infected.'" (3) Venereal syphilis didn't discriminate between its' victims. Royalty, as well as children, and grandchildren were affected because of transmission from mother to child. It's victims were crippled, disfigured, if not killed by it. "Next to tobacco, it was the most harmful gift of the New World to the Old."(3)

The New World origin detractors claim that although this theory was circulated in 1539 there are some questions with this logic. The 1539 theory was that syphilis entered Mediterranean ports from ships returning from the Americas. From here it spread to Naples and was picked up by invading French forces under the command of Charles VIII in 1494. However, there were no reports of infection during Columbus' first return voyage in 1493 but by the return of the second voyage in 1496, syphilis was already spreading through Europe. By 1498, syphilis had arrived in India with Vasco de Gama and in 1505 arrived in China and Japan.

However devastating syphilis was to Europe it cannot be compared to the effect that infectious diseases had on the New World. "Biologically, this was the most spectacular thing that has ever happened to humans." (2) Infectious disease brought over by the Europeans decimated the indigenous populations and enabled the conquering of civilizations that greatly outnumbered the arriving forces. Nor was the impact of smallpox and other diseases short-lived. "After 1492, it would take nearly 500 years of exposure to repeated epidemics and the advent of modern medicine, before their populations would begin to rebound.(6)

Epidemic Timetable

1518 - Smallpox hits Espaniola.

1520 - Mexico with Cortes

1525, 26 - Peru, Pizarro conquers Cuzco

1530,31 - Measles hits Mexico and Peru

1546 - Typhus arrives

1556-60 - Influenza hits Europe and Japan

1558,59 - Influenza hits the New World

16th and 17th c. - Diphtheria, mumps, smallpox(again), and Influenza(again) (1)

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