

# Biology and Power: How Plants, Animals, and Disease Changed the World

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Humans settled North and South America thousands of years before Europeans arrived. Migrants from Siberia traveled over a land bridge called the Bering Straits to Alaska during the Pleistocene Ice Age.<sup>1</sup> Between 40,000 and 12,000 years ago, those people moved southward to Central America and South America. They hunted giant bison, sloths, lions, and camels. With the end of the Ice Age, the ice melted away, and the land bridge over the Bering Straits disappeared because the sea level rose. New rivers and landscapes formed throughout the Americas.<sup>2</sup> Those migrants from Siberia, who later became known as Indians or Native Americans, splintered into thousands of different tribes. By the time Europeans arrived, approximately 50-60 million people lived in the Americas, 15 million of them in North America. The arrival of Europeans in the Americas in the late fifteenth century kick-started a massive exchange of plants, animals, and diseases between the eastern and western hemispheres, which changed pre-existing cultures for Native Americans, Europeans, Africans and Asians. This biological exchange (known as the Columbian Exchange) reshaped the landscape of the New World, making European countries like Spain, England, and Portugal dominant global powers in the process.

This exchange began with Christopher Columbus, an Italian explorer and sailor. After a rejection from the Italian government, the Spanish Queen, Isabella of Castile, recruited him to find an alternate route to India. Columbus headed westward with three ships from Palos, Spain in 1492.<sup>3</sup> According to journals, his ships arrived at the Caribbean island of Hispaniola on October 11. Later on, he found Cuba and the Bahamas. Columbus met natives known as the Taina and he called them Indians. Columbus made three more trips to the New World in 1493, 1498, and 1502.<sup>4</sup> Columbus's journeys to these islands initiated more Spanish expeditions into the Americas. Italian mapmaker Florentine Amerigo Vespucci called the Americas the "New World," juxtaposing the western hemisphere with Europe. In Germany, mapmakers called the "New World" America on some popular maps and the name became common.

The interactions between Europeans and Native Americans often resulted in conflict and death. The Spaniards killed a lot of Taina chiefs and forced the Taina to work in mines and on plantations. Within a decade, most of the Taina population were wiped out by disease, overwork, and malnutrition. As Spanish exploration continued, Conquistador Hernando Cortes landed on eastern Mexico, with 500 men, in 1519. Cortes brought his horses, guns, and metal armors with him. The local populace had never seen horses and guns. These technologies gave Cortes the upper hand in warfare against the native tribes. Cortes defeated the rulers of Tabasco and extracted food, supplies, and women from them. Later on, Cortes headed for the Aztec capital of Tenochtitlan. The Aztec emperor Montezuma II thought Cortes was the fair skinned God Quetzalcoatl. Montezuma welcomed the Spaniards and gave them gold and other gifts. Cortes, however, attacked the Aztecs and took Montezuma hostage<sup>5</sup>. Other native tribes helped Cortes take over Tenochtitlan because they were furious with the human sacrifice that was imposed on them by the Aztecs. When the Aztecs tried to retake Tenochtitlan, they were struck by smallpox, which obliterated much of their population. Three million Aztecs were killed by smallpox. Some historians have written that Cortes intentionally infected the Aztecs with smallpox.

Because the main cause of these conquests was the Europeans' thirst for resources, many goods were sent back to Europe. Columbus's arrival in the Americas started the Biological Exchange, an exchange of plants, animals, and pathogens between the Americas and the rest of the world. Europeans benefited greatly from this exchange. Plants such as potatoes, beans, squashes, corn, peanuts, pineapples, and cocoa were shipped to Europe. The potato, in particular, became a very important food in Europe because it provided increased nutrition and was affordable to the average people. Potatoes were so popular in Ireland that they became a symbol of Irish culture. Tomatoes became very popular in Italy. Tomato sauce came to be used in spaghetti, pasta, and pizza. Beans provided a source of vegetable protein for the average European populace. Because poor people were able to afford these new nutritious foods, the population of Europe grew rapidly.

Furthermore, Europeans brought sugar, wheat, citrus fruits, bananas, and rice to the Americas. Sugar plantations became big business for the Spanish and Portuguese Empires. Because so many Native Americans were dying from diseases, the colonizers looked for laborers from elsewhere. The need for laborers initiated the Transatlantic Slave Trade.<sup>6</sup> Slaves were taken from Africa to work on sugar plantations in the Caribbean and Brazil. Europeans also brought horses, cattle, pigs, and goats to the New World. Horses allowed the Spaniards to defeat the Native Americans quickly.

Additionally, the British brought their ideas about capitalism to North America. British colonists built settlements in Jamestown and Plymouth. John Rolfe crossbred American and European tobacco to create a product that was highly desirable in Europe. Tobacco became big business, and its production grew so much that African slaves were taken to the British

colonies to work on plantations. As for the diseases, Europeans brought smallpox, mumps, influenza, typhus, chicken pox, and measles<sup>7</sup>. Native Americans were greatly affected by these diseases because they were not exposed to animals from the Old World and, therefore, did not have immunity to animal-borne diseases. The Native American population in North America dropped from 15 million in the pre-Columbian period to less than 500,000 in 1850. The effect of the diseases made it easy for Europeans to colonize the New World.

In conclusion, the Columbian Exchange changed the Americas and handed over control of the Western Hemisphere to Europeans. This exchange had both positive and negative aftermaths. The introduction of potatoes, tomatoes, and corn led to rapid growth of population in Europe and Asia. Poor people were able to afford nutritious foods. The need for laborers for sugar plantations initiated the Atlantic Slave Trade. This trade led to the enslavement of millions of Africans. Diseases from Europe obliterated most of the Native American population of the New World. British colonists from Jamestown became rich selling American tobacco. Spanish, Portuguese, and British Empires benefited greatly from the deaths, slave trade, and cash crops. These empires became powerful and used their newfound riches to conquer other parts of the world, such as India, Africa, and Indonesia.

## Notes

- <sup>1</sup> Rutherford, Adam. "A New History of the First Peoples in the Americas." *The Atlantic*, Atlantic Media Company, 3 Oct. 2017, [www.theatlantic.com/science/archive/2017/10/a-brief-history-of-everyone-who-ever-lived/537942/](http://www.theatlantic.com/science/archive/2017/10/a-brief-history-of-everyone-who-ever-lived/537942/).
- <sup>2</sup> Hogenboom, Melissa. "Earth - The First People Who Populated the Americas." *BBC*, BBC, 30 Mar. 2017, [www.bbc.com/earth/story/20170328-the-first-people-who-populated-the-americas](http://www.bbc.com/earth/story/20170328-the-first-people-who-populated-the-americas).
- <sup>3</sup> "Christopher Columbus Discovers America, 1492," EyeWitness to History, [www.eyewitnesstohistory.com](http://www.eyewitnesstohistory.com) (2004).
- <sup>4</sup> "Christopher Columbus." *History.com*, A&E Television Networks, [www.history.com/topics/exploration/christopher-columbus](http://www.history.com/topics/exploration/christopher-columbus).
- <sup>5</sup> Szalay, Jessie. "Hernan Cortes: Conqueror of the Aztecs." *LiveScience*, Purch, 28 Sept. 2017, [www.livescience.com/39238-hernan-cortes-conqueror-of-the-aztecs.html](http://www.livescience.com/39238-hernan-cortes-conqueror-of-the-aztecs.html).
- <sup>6</sup> "Biological and Cultural Exchanges During the Age of Exploration." [www.dcs.k12.oh.us/cms/lib/0H16000212/Centricity/Domain/293/Age\\_of\\_Exploration\\_Enrichment.htm](http://www.dcs.k12.oh.us/cms/lib/0H16000212/Centricity/Domain/293/Age_of_Exploration_Enrichment.htm).
- <sup>7</sup> "Biological Exchange." *Industrial Revolution*, [web3.unt.edu/cdl/courseprojects/HIST2610/content/01\\_Unit\\_One/02\\_lesstwo/07\\_bio\\_exchange.htm](http://web3.unt.edu/cdl/courseprojects/HIST2610/content/01_Unit_One/02_lesstwo/07_bio_exchange.htm).

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Cite as: Ali, S.S. (2019). Biology and power: How plants, animals, and disease changed the world. *City Tech Writer*, 14, 72-74. Online at <https://openlab.citytech.cuny.edu/city-tech-writer-sampler/>